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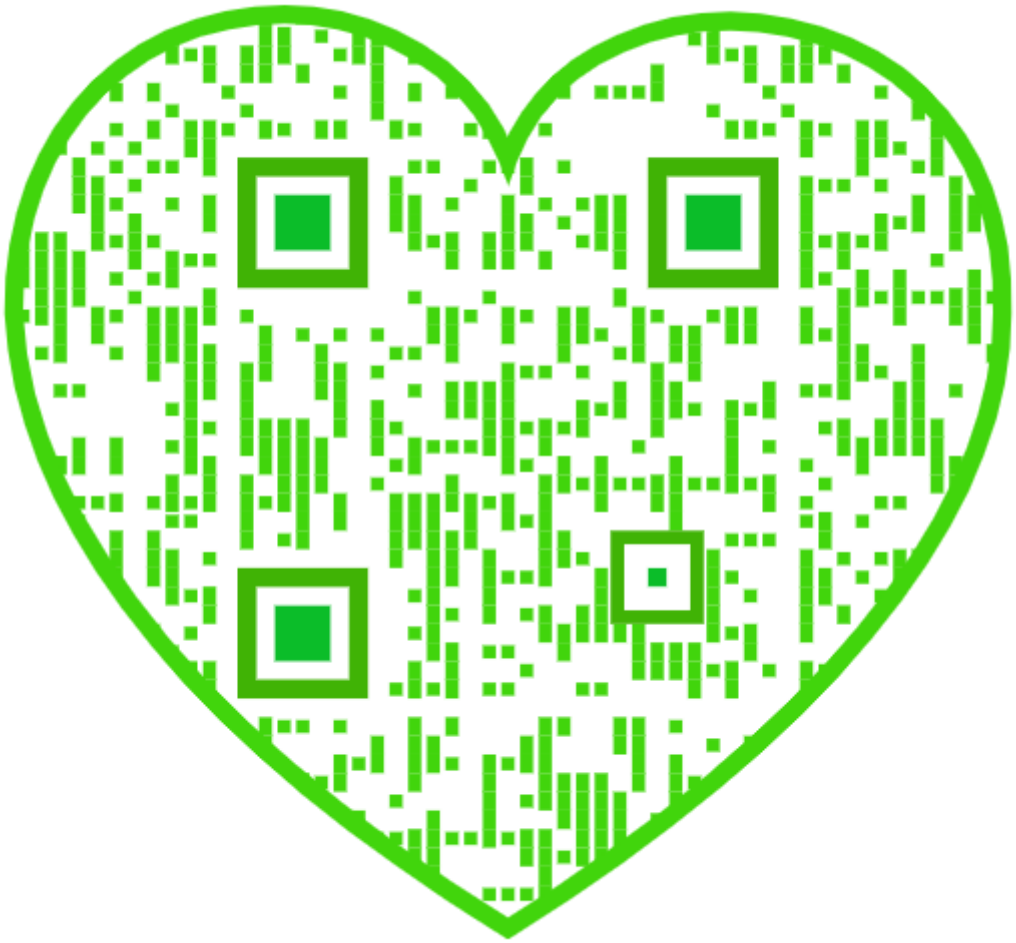

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THE HUMBOLDT LIBRARY SERIES.

HYPNOTISM:

ITS HISTORY AND PRESENT DEVELOPMENT.

BY

FREDRIK BJÖRNSTRÖM, M. D.

Head Physician of the Stockholm Hospital, Professor of Psychiatry, Late Royal Swedish Medical Councillor.

AUTHORIZED TRANSLATION
FROM THE SECOND SWEDISH EDITION,

BY

BARON NILS POSSE, M. G.

Director of the Boston School of Gymnastics.

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PREFACE.

Observandum sed non imitandum.

This ancient classical dictum, which in our language might be translated, *Investigate, but do not experiment*, applies, with reference to the subject here treated, to both the physician and the public at large; yet, in such a manner, that, while the first part applies to both, the second is for the public alone.

Now that the old mystical and often misused animal magnetism has, under the modern name of hypnotism, entered upon a more scientific stage, and that prominent scientific men in France, Italy, Germany, and England, especially during the last decade, have commenced to separate the wheat from the chaff of this important subject, no educated person should be ignorant of it, and above all, no physician should pass it by, on account of prejudice.

Hence I have decided to try and give an easily comprehensible account of the development and present status of hypnotism, for the benefit of physicians as well as of lawyers and of the interested public; and as my personal experience in the matter is as yet too small, I have collected from the best and latest authorities such facts as to me seemed surest, most reliable, and most instructive. I have especially illustrated the dark sides of hypnotism, and the many injurious effects upon the physical and psychic life of man, which may result from the abuse of it: and I would strongly advise those who have not had a medical education, not to meddle with this agent so dangerous and so difficult to control.

If this treatise shall be the means of inducing more specialists seriously to investigate this subject, and to use their knowledge as an

aid in therapeutics; and if by it the public shall be prevented from playing with a fire by which oneself or others may be burnt, the object of my unpretentious work will be gained. FR. BJÖRNSTRÖM.

STOCKHOLM, October, 1887.

PREFACE TO THE SECOND EDITION.

As, on account of the rapid sale of the first edition, the publisher has already decided to issue a new edition of this work, the author has availed himself of the opportunity to add a special chapter on the abuse and the dangers of hypnotism, so as still more to emphasize his previously expressed warning to the public against a careless trifling with this force.

The question has arisen, whether it could be considered proper to enlighten the public on such a dangerous subject. Before publishing his work, the author had the same doubts. But considering that the question is of so important and interesting a nature, that it neither could nor should be passed over in silence, especially as the overflow of foreign literature on the subject would soon make its way even here, the author concluded that the question could be most easily directed into the right channels, if it were taken hold of by a physician who has given special study to these phenomena. FR. BJÖRNSTRÖM.

STOCKHOLM, November, 1887.

CHAPTER I.

HISTORICAL RETROSPECT.

THE wonderful psychical phenomena that are now-a-days embraced under the names of *hypnotism* and *somnambulism*, and which as *animal magnetism or mesmerism*, stirred the world in the latter part of the last century and far into the present were known and used from the earliest times in the service of mysticism, prognostication, and religion, by the priests of ancient Egypt as well as by the old Indian fakirs, the Greek oracles, the Roman sibyls and the mediæval magicians, exorcists, conjurers, pneumatologists, etc.

At certain festivals in ancient Egypt, women and children were wont to be inspired by the god Apis, and so entered into a prophetic trance. Traces are found also of spiritism: in Babylon there was a belief in rapping spirits, among the Israelites the Witch of Endor conjured the shadows of the dead just as does a spiritistic medium of the 19th century. In the temple of Ceres in Achaia, there was on the bottom of a well a mirror, in which the priests could produce the image of the sick for whom a cure was sought; this corresponds, in a measure, to the photographic pictures of spiritism. In the temple of Apollo, in Delphi, the priestess was seated on a tripod, placed over a chasm in the ground, from which vapors of sulphur arose. Prepared by fasting and mortification, she soon was in a kind of hypnotic trance, during which she transmitted her oracles from the gods, just like a somnambule. The Greek and Roman sibyls were clairvoyant only on certain occasions, when they had convulsions. The skill of the Indian fakir in spiritistic matters approaches the incredible, and deserves a special description that space will not allow here, particularly as it widely passes the limits of ordinary hypnotism.

After the introduction of Christianity, the belief in the divine origin of these phenomena ceased. They were looked upon instead as the works of the devil, and those who possessed such power were regarded as *obsessed*, as sorceresses, as bewitched, etc. Those witches who were inhumanly persecuted during the middle ages and even up to recent times, were nothing but somnambules, who easily entered into the hypnotic state; and this was so common, that in the year 1600 the number of witches in France was reckoned to be nearly 300,000. Under the most dreadful tortures they often fell asleep and became senseless. Sometimes this also occurred among religious fanatics; thus it is told of one of the persecuted Hussites, that he fell into such a lethargic state under torture, that he was left for dead,

but that he afterward wakened to life very much astonished at the wounds he had received without feeling any pain.

Some showed great clairvoyance concerning both past and future things. Others displayed a marvelous development of the senses and heard the slightest noise from immense distances. Some spoke in foreign languages, which they did not know when in normal condition, as in the case of the fanatics of Anxanne (1652); they could also read the secret thoughts of others, and obeyed involuntarily orders that had been thought but not uttered.

The descriptions of the condition of the *obsessed* correspond thoroughly with what is now seen in the hypnotized: tetanus, catalepsy, lethargy, somnambulism, and often also hystero-epileptic convulsions. They also lost the memory of what they had said or done during the ecstatic state. In some, this excited state of the nervous system changed to real mental disease, which often took that form of insanity in which the patient imagines himself transformed into an animal, as a wolf, *lycanthropy*, or into a vampire, *vampirismus*, *lamismus* (lamia-vampire). The remedy consisted in *exorcism* or the efforts of the priests to conjure away the evil spirits, by which these persons were considered beset, and in which a kind of hypnotic manipulations were used. The radical means of burning them on a pile, as witches, was however generally resorted to, after they had been previously tormented by juridical procedures, in which the most cruel torture was used, as also superstitious methods for testing their real witchcraft, such as the witch's scales, etc.

These nervous conditions show great contagiousness. In the beginning of the 18th century a single Calvinist, hailing from a village in Dauphiné, was sufficient to impart a prophetic spirit to the whole population. By a magnetic inspiration of this spirit through the mouth of some persons, who afterwards communicated it to others, no less than 8,000 or 10,000 prophets arose in Dauphiné, Vivarais, and the Cevennes. Men, women, children, old men, all prophesied the future. Children, three years old, who never before had spoken anything but the *patois* of the province, now during the trance, spoke the purest French with astonishing ease, foretelling the speedy destruction of the papistic Babylon.

Another hypnotic phenomenon which has survived from the most ancient into the latest times (Boltzius!*), is the curing of certain diseases by the laying on of hands. During the Middle Ages most European kings and princes considered themselves especially gifted with this power. But also persons of lower rank occupied themselves with this convenient mode of healing, and as particularly prominent thaumaturgists are mentioned *Greatrakes* and *Gassner*. One day

* *Boltzius* was a fanatic who, but a few years ago in Sweden, "healed the sick" by prayer and the laying on of hands, until the Board of Health put a stop to his proceedings.

in 1662, the former, an Irishman and soldier of distinction, had a divine revelation that he could cure scrofula by the laying on of hands alone. He tried and succeeded with one after another. He had a new revelation that in the same manner he could cure fevers, wounds dropsy, etc. His fame spread enormously; patients flocked to him from all directions; by stroking, he led the disease from the centre to the periphery; often crises resembling the mesmeric were produced. About 100 years later, in 1773, another performer of miracles (*Gassner*) appeared, an ex-monk from Suabia, who, after having passed through Suabia, Switzerland, and Tyrol, settled in Regensburg, where he drew around him 10,000 patients. He commenced his cure by exorcism to try whether any devil were in the body, who would show himself by convulsions. His cure of a young German lady of high rank aroused the most comment; her devil showed perfect obedience to Gassner's Latin words of command; but then the girl was thoroughly versed in Latin.

Here we see unconscious magnetizers or hypnotizers, who practised magnetism or hypnotism long before these names had been invented.

In Egypt, there is a sect that for forty centuries has practised hypnotism. In the middle of a white porcelain plate they draw with pen and ink, two triangles that cross each other, fill the figures with some cabalistic words, and pour oil over the plate to make it more shiny. By staring for some minutes at the middle of the triangles young people easily fall asleep and enter the somnambulistic state. Others use only a ball of crystal. Similar agencies are used by Arabic sorceresses and Morocco marabouts. The former draw in the hand a circle with a black spot in the centre. Staring at this spot soon produces hypnotic sleep and loss of sensibility. The latter place on a table, covered with a clean cloth, a bottle filled with water in front of a lamp, and sleep is produced by fixing the eyes on the light in the focus of the bottle. In Constantine, the members of the tribe of the Beni-Aïaoussa sit down in a circle, amid music from drums and castanets, and perform first a number of voluntary swaying movements, until with foaming mouth, staring eyes, and bodies dripping with perspiration, they fall into convulsions and insensibility, during which they pierce their flesh with daggers, walk on red-hot iron, swallow pieces of glass, etc., without the slightest pain, and finally, exhausted, fall into deep slumber.

Most of the above mentioned phenomena, covered by the veil of mysticism, we find again in the end of the last and the beginning of this century, in the facts—too much mingled with quackery—of animal magnetism, which finally gains its scientific explanation and illustration in the hypnotism of to-day.

First a few words about Mesmer and the animal magnetism.

Friedrich Anton Mesmer, born 1734, in a village on Lake Constance, pursued his medical studies in Vienna. In 1766, after he had

treated the mystic subject "The influence of the planets on the human body" in a thesis for the degree of Doctor, he commenced to use mineral magnetism as a remedy, and explained its action by a corresponding magnetic quality of the human body. Soon he considered magnetism as a quality common to all bodies and as the bond which held together the whole creation; this now took the name of *animal magnetism.* "Through certain manipulations (such as touching, stroking, in a word 'magnetizing'), even simply by merely a strong act of the will, one can," he says, "produce this power in persons, impart it to others, and cause the most marvelous and wholesome effects." The magnet now became superfluous, and cures were performed by only the newly-discovered animal magnetism. By medical men and physicists, however, he was considered a juggler, who made his cures through hidden magnets. His letters to most of the learned societies of Europe were left unanswered, except by the Acadamy of Berlin which declared his theory fallacious. On a journey to Suabia and Switzerland, he witnessed the miraculous cures of Father Gassner and declared that they were produced by animal magnetism. In Vienna, he was afterward violently attacked on account of the alleged cure of a blind girl (Marie Paradise), and he was expelled from that city in 1777, after an investigation by an imperial commission. He then moved to Paris and by his intimacy with Dr. Charles d'Eslon, physician to the Count of Artois, he was soon introduced into the fashionable world, which fascinated by the mystic doctrine, before long crowded his parlors. How things went on in these parlors was vividly described by Dr. I. P. Broberg, in his lectures delivered in 1865, on "Animal Magnetism and the Mysticism of the 18th Century." From it we borrow the following particulars:

Mesmer's parlors in the hotel at the Place Vendôme soon became the rendezvous of the Paris fashionable world. In the so-called experimenting room, there stood in the middle of the floor a round tub, a "*baquet,*" with a diameter of about five feet and provided with a lid. On the bottom of it bottles were so placed that some had their necks converging towards the centre, while others diverged outwards. If possible, all the bottles were magnetized by the same hand. The tub was filled with water, so that the bottles were covered; through the lid, which was provided with several holes, bent iron bars protruded. The walls of the room were covered with mirrors, by the reflection of which the magnetism was increased, according to the doctrine of Mesmer. The patients were placed in a circle around the tub or "*baquet,*" and so close together that they were in contact with each other's knees. Each one held in his hand one of the iron bars that protruded from the *baquet.* Generally there was placed a second row of patients behind the first—and often there were several rows—who formed closed chains by holding each other's hands and who were in contact with

the tub by means of long magnetized cords. Besides, all the patients were mutually connected through a cord twisted around each one's waist, so that the magnetic force might thus the more easily pass from one to another. A mystic twilight prevailed in the room. The ear was charmed by sweet melodies played on harp and piano and during the pauses a harmonium sounded its soft vibrating tones, an instrument that Mesmer played with a master hand. Men and women were now sitting beside each other, holding the mystic bars from the tub and each other's hands; first one, then another began to experience strange sensations and twitchings, which were soon imparted to all of them. Then Mesmer solemnly entered, dressed in a violet robe of embroidered silk, holding in his hand an iron staff. With majestic dignity he walked around and stroked the patients. Within a short time the healing crises appeared. Various hysterical attacks took place. The patients jumped up, wept, laughed, embraced each other, beat the walls had convulsions, rolled on the floor, etc. "Those who have not actually witnessed the scenes in Mesmer's parlor's," a contemporary writes, "can hardly form an idea of them. On the other hand, if we witness them we can only be astonished partly at the complete tranquility and repose displayed by some, partly also at the violent excitement shown by others. We see some sympathetically drawn to each other and lovingly trying to relieve each other's crises. They are all blindly submissive to the magnetizer. Even though they be in apparent trance, they are immediately wakened by the slightest gesture of the magnetizer, by his mere glance. A sudden noise causes the most terrible convulsions." Those who had really terrible crises of healing were carried into an adjoining room, the walls and floor of which were covered by well-padded mattresses, so that, without any risk, they could fight for health as best they were able.

After having quarreled with the faculty and the physicians of Paris, as well as with his friend d'Eslon, who told Mesmer's secrets and opened a parlor of his own, Mesmer left Paris in disgust, but was soon called back by his friends, instituted a secret magnetic order under the name of *Société* or *Ordre de l'Harmonie*, opened his parlors anew, and also constructed smaller *baquets* for private parties which were in such demand that subscription had to be made for them long in advance. Persons worn out by idling, laziness, and pleasures came in crowds to his hotel, and he soon accumulated a large fortune.

In the principal cities throughout all France, magnetic societies or harmonic orders so called, were formed under the headship of Mesmer. The expectations of people had no limits; man was to become stronger and more healthy, even the animals would be better and the magnetized tree would bear finer fruit and its leaves would not fade. In other words, through magnetism a real golden age was expected to come.

In 1784, however, the government appointed a committee of learned men (among them Franklin, Lavoisier, Jussieu, Bailly) to make a minute scientific investigation of the celebrated question. When Mesmer refused to open his parlors for this investigation, the experiments were made at d'Eslon's. Most of them were unsuccessful, and in the report, ably written by Bailly, all the magnetic marvels were referred to the workings of imagination. His report ends with the words:—"Magnetism is one fact more in the history of human errors, and a great proof of the power of imagination."

After this blow, the star of Mesmer gradually declined in Paris, especially after a new one had arisen in the famous imposter, Cagliostro, who soon attracted the public by his conjurings and his "powder of immortality." In the country, however, magnetism spread for some time through the many pupils of Mesmer. He himself retired, left Paris at the outbreak of the revolution, lived after that for some time in England under another name, and finally died, in 1815, in the small city of Meersburg. D'Eslon on the contrary, continued his magnetic cures in Paris until his death in 1786, which, strange to say, was caused by pneumonia, although he himself had declared, that he was so well magnetized that death could reach him only through accident or decrepitude.

A new era commenced, however, in the history of animal magnetism, inasmuch as the convulsive crises began to be considered more injurious than beneficial, and under the direction of Mesmer's most zealous pupil, the marquis *de Puységur*, attention was instead given to somnambulism and clairvoyance, as being the principal effects of magnetism. When the marquis, on his estate at Busancy, near Soissons, was so crowded by persons seeking help, that he could not personally magnetize them all, he conceived the bright idea of magnetizing a tree in his park, an elm, the radiating power of which afterward attracted numerous multitudes. Puységur soon discovered the soporific effect of magnetism, as also that during the sleep persons answered questions and often proved much brighter and more intelligent than in the wakeful state. This was notably the case with an otherwise very stupid peasant, who, during the magnetic sleep, showed himself so discerning and clairvoyant that M. de Puységur used to call him "my intelligence." Now new life entered into the magnetic societies and a theory invented by Tardy de Montravel was universally accepted, that man, besides his ordinary five senses, has a sixth sense, the internal sense, the organ of which is the whole nervous system, but whose principal seat is the large nerve plexus of the stomach. This sense corresponds to the instinct of animals. When the external senses are benumbed and the organ of instinct is in a state of increased activity, this sense performs alone the functions of all the others. The soul of the somnambulist can thus see and comprehend not only

the condition within the bodies of others, but also within his own body. Through this internal sense the somnambulist can read any kind of writing without using his eyes. To produce this condition, Mesmer's elaborate apparatus was not necessary, but merely soft strokings or even a strong will only. In this new Puységuric form, magnetism again gained a strong following, also through Germany (through Lavater), England, Holland, and Italy.

Sweden also was favored by one of Mesmer's pupils, Marais, who in 1786 made various magnetic experiments before certain high officials in Stockholm. The Swedenborgian society known as the exegetic and philanthropic society, interested itself especially in magnetism, and even before the end of 1786 there were in this city, both a harmonic society and a *baquet.*

To the English surgeon, James Braid of Manchester, who in 1842 published his work "Neurypnology," belongs the merit of having taken animal magnetism out of the dark region of charlatanry and brought it into the clear light of science; of having proved that its phenomena do not depend upon a fluid transmitted from the magnetizer, but on nerve forces working within the organism of the one magnetized; and finally, of having given the whole thing the more suitable name of hypnotism. In order to expose the impostures of mesmerism, he began, in November 1841, to study the subject at the *séances* of Lafontaine. He then found that at least one phenomenon did not depend upon imposture, viz., the spasmodic closing of the eyelids. Thinking that this spasm must result from fatigue in certain muscles of the eye, he had his friend Walker to gaze fixedly at the neck of a bottle, and within three minutes his eyes closed, tears ran down his cheeks, his head drooped—a sigh, and he fell into a deep sleep. The experiment was repeated on Braid's wife and on a servant girl with the same result. He now tried the procedures of the magnetizers with equal success. From this he concluded that the magnetic phenomena must be attributed to a disturbance of the nervous system, produced by the concentration of the visual powers, the absolute repose of the body, and the fixing of the attention; that all depended on the physical and psychical condition of the subject, not on the will of the magnetizer or on any magnetic fluid, or on any general mystic agent. Accordingly, he let the subjectivity of the sleeper play the main rôle, and he explained numerous somnambulistic phenomena by a morbidly increased sensibility—*hyperæsthesia.*

Furthermore, Braid found that the hypnotic sleep is not always the same, but varies from a light dreaming state to a deep coma. In some, the sleep is quite light, in others, so deep that they lose consciousness and will, and remember nothing after awakening. In some, entire muscular relaxation takes place, in others, cataleptic tetanus

with increased respiration and circulation. Change from one state to the other could be produced by directing a current of air against the face, and awakening could be produced in the same way.

Braid also understood "suggestion" although he did not use this name. One can play he says on the sleeper as on a musical instrument, and create dreams in their imagination which they accept as reality. In order to produce illusions and hallucinations, you need only to declare in loud voice and in a commanding or persuading manner, the thought picture or sensation that you wish to call up in his mind. Hallucinations can also be produced indirectly by corresponding attitudes of the limbs. A subject placed in an attitude of ecstasy sees Heaven: if you wrinkle his forehead he experiences gloomy fantasies. Even in those who are awake, suggestions have been produced and employed as a means of mesmerizing from a distance. As a means of curing diseases, Braid tried hypnotism with more or less success.

In spite of the great scientific value of Braid's theories (or Braidism) they did not, however, gain much ground with the medical profession, nor did they prevent various less scientific theories in explanation of this kind of phenomena from trying to attain prominence, such as in America Grimes's *Electrobiology*, in Germany Reichenbach's *Odology* and Barth's *Phrenomagnetismus*, in France Philips's *Electrodynamisme Vitale*. In England, hypnotism was but little known or noticed, although the articles "Sleep" in Todd and Carpenter's Encyclopœdia and "Hypnotisme" in Nysten's "Dictionnaire de Médecine," 1855, as also Meunier's article in *La Presse*, 1852, were designed to bring it before the public.

Although the opinion of the scientific world was against the cause, there were however some French physicians who were sufficiently aware of the importance of this question to study it, and who had courage enough to publish their investigations, as Professor Azam, of Bordeaux, who, after experimenting a couple of years, together with his afterwards famous colleagues, Broca and Verneuil, in 1860, published his own experiences in the medical journal *Archives Générales de Médecine*. Shortly before this, Velpeau had related before the French Academy Broca's success in using hypnotism as an anodyne in surgical operations.

In 1860 interesting observations were also published by Demarquay and Giraud Teulon, by Philips and Guérineau. In 1865, Professor Lasègue showed how catalepsy and various hypnotic phenomena could be produced in hysterical women simply by a pressure on the closed eyelids, and in 1866, Liébault of Nancy pointed out the use of hypnotism as a valuable means not only of curing disease, but also of education for the improvement of character and morals. In 1875, Richet showed among other things how the personality can be changed by hypnotism.

These single experiments however succeeded but little in arousing the interest of scientists for hypnotism, while the curiosity of the public was from time to time revived by traveling professional magnetizers. In the beginning of this decade, one of these, Hansen, a Dane, succeeded in interesting some German professors in the scientific solution of the question, and the result of this was some works by Heidenhain, Grützner, Berger, Schneider, Preyer, Weinhold, and others. But no one has contributed so much to the scientific explanation of this matter and by his authority sanctioned so many of these experiments as entitled to scientific value, as Prof. Charcot, the famous neurologist of La Salpêtrière in Paris. So early as 1878, he commenced his strictly scientific investigations of the effects of hypnotism on hysterics; of the purely physical phenomena; of the different stages, the lethargic, the cataleptic, and the somnambulic, besides intermediate mixed stages. From time to time these experiments were published, partly in public lectures before physicians from all over the world, partly in journals; and a number of pupils, who had taken part in the investigations or made such for themselves, have treated this subject so extensively in a number of pamphlets, that now it is coming to be ranked among the best-ascertained data of neuropathology. Another school, which in many points differs from that of Charcot, is the school of Nancy, with Bernheim, Liébault, Beaunis and others at the head. These scientists have paid special attention to the practical use of hypnotism, partly as a means of curing disease, partly as an educational agency; they have also pointed out its great importance in medical jurisprudence.

Among other recent French authors on the subject may be mentioned Paul Richer, Charles Richet, Azam, Regnard, David, Dumontpallier, Cullerre, Baréty, Perronet, Ferè, Gilles de la Tourette, Bottey, Pitre, and Ochorowicz, a Pole; among English authors Hack Tuke; among Italians, Sepilli, Tamburini and Maggiorani; among Germans, Obersteiner and Gessmann.

Since July 1886, hypnotism also has had its own scientific journal, *La Revue de l'Hypnotisme*, published monthly in Paris, with Dr. E. Bérillon as chief editor and with such *collaborateurs* as Charcot, Luys, Voisin, Ladame, Hack Tuke, Ireland, and others.

CHAPTER II.

DEFINITION OF HYPNOTISM; SUSCEPTIBILITY TO HYPNOTISM.

HYPNOTISM (from the Greek word *hypnos*, sleep) is the science of the sleep-like state (*hypnos*)—nearly corresponding to the older expression, magnetic sleep—which manifests itself by various nervous phenomena, and is produced, in certain persons susceptible of it, generally by some special influence on the nervous system exerted

by another, but also, though more rarely, by spontaneous action (*spontaneous hypnotism; idiohypnotism*). To throw anybody into such a state is to *hypnotize* him. The sleeper is hypnotized; is in *hypnosis* —in the hypnotic state. To waken anybody from hypnotism is to *dehypnotize* him.

We first turn to the question: what persons are susceptible of hypnotism?

Formerly it was supposed that only weak, sickly, nervous persons and especially hysterical women were susceptible to hypnotism. Later experiences, and particularly the elaborate statistics of Liébault, of Nancy, have shown that almost anybody can be hypnotized. A difference, however, must be made between those whom it is easy and those whom it is difficult to hypnotize. Among the former belong without doubt the hysteric; but otherwise physical weakness gives no special predisposition. The willingness of the subject, his passivity, and power to concentrate the thought or attention on the intended sleep have more importance. Thus it has been found that even the strongest men from the lower classes (mechanics, laborers, soldiers), are more easily put to sleep than intelligent persons, who voluntarily or involuntarily, let their thought wander to various objects which distract the attention. It will often be found that those who cannot be hypnotized in the first, second, or third *séance*, yet succumb to renewed patient efforts.

Age is of consequence, inasmuch as it is always easier to hypnotize young persons, especially from seven to twenty-one years. This has long been known, and it was on this account that the ancient Egyptian, Greek, and Roman priests and the Indian *yogis* preferred to employ children and young persons for their mystic ceremonies.

Out of 744 persons of different ages, who were tested by Liébault in one year, he succeeded in throwing 682 into a more or less deep hypnotic state, so that only 62 proved entirely insusceptible, and among these none under fourteen years of age.

Neither does *sex* make such a difference in favor of women, as is generally supposed. The fact that hysteria is almost peculiar to the female sex certainly increases the ratio of susceptibility to hypnotization among women, but not so much as might be supposed. Out of Liébault's 287 men and 468 women, 31 of each sex proved insusceptible to hypnotism, which gives 10.8 per cent of men and 6.6 per cent of women; thus the difference is not great.

Climate seems to have the effect of making hypnotization much easier in warm and southern countries than in cold and northern. Thus the French show a far greater susceptibility, than the Scandinavians and Germans. In the tropics hypnosis is said to appear rapidly and to become very deep.

Moreover a number of lesser circumstances are considered as hav-

ing a favorable or a disturbing effect. Thus the sleep is hindered by every distracting noise, by a recently taken meal, by mental emotions, by too much heat or cold in the room, by strong light, by damp atmosphere, by alcoholic liquors, coffee, tea, and sundry other causes. On the other hand, the sleep is promoted by quiet and rest, both internal and external, by twilight, darkness, soft music, fragrant flowers, etc. The oftener a person is hypnotized, the sooner and more easily will he fall asleep. Medium intelligence seems also to be favorable, for the reasons mentioned above. On the other hand, it is impossible to hypnotize idiots and very difficult to do so with the insane; but if it succeeds at all with the latter, they can be cured through suggestion, as Voisin has shown.

Baron Reichenbach, who has written an extensive work upon "odic force" and the human sensitivity, enumerates a number of signs of susceptibility in this respect; but as yet they have not been sufficiently submitted to scientific criticism.

In order to decide rapidly and easily the question of a person's susceptibility to hypnotism, special instruments of investigation—*hypnoscopes*, so called—have been invented. The first was constructed a couple of years ago by Dr. Ochorowicz, the Polish physician of Paris, and consists simply of a grooved magnet, which was put on the index finger of the person who was to be examined. If this person within a few minutes experienced some strange sensation in the finger, as of heat or cold, formication, prickling, or twitching in the hand, or swelling of the finger, this proved that he was easy to hypnotize. With this instrument about 30 per cent. of those examined proved susceptible to hypnotism. But it was found by Obersteiner and others, that also those who did not show any sensitiveness to the hypnoscope were easy to hypnotize, and that, on the whole, only the hysteric, who are generally sensitive to metals and magnets, were sensitive also to the hypnoscope. After this, the value of the instrument as a "medium-tester" became more than doubtful.

From several magnets combined von Hellenbach and Gessmann in Vienna constructed considerably stronger hypnoscopes, through which 66 per cent. of those examined showed the above mentioned sensitiveness; moreover, some who were used to being hypnotized fell into hypnotic sleep by the mere effect of the hypnoscope. Nevertheless Gessmann considers hypnoscopes more valuable for investigating the effects of magnets on the organism, than as standards or reagents of hypnotism.

CHAPTER III.

MEANS OR METHODS OF HYPNOTIZING.

HYPNOTIC sleep can be produced in various ways, by various means ("hypnogenic processes"). Almost every magnetizer has had his special method, and they have all succeeded in a measure. According to Bernheim the nature of the external means is of little importance, as long as it impresses the imagination or fancy of the one hypnotized, and conveys to him the idea that he will go to sleep. According to this theory all hypnosis would depend upon a "suggestion," a transmitted conception, and thus no one could be hypnotized against his own free will, or unless he were fully conscious of the intended sleep. It certainly is true that a conscious and willing co-operation promotes the sleep, but a number of cases are on record where the sleep appears even unexpectedly, unconsciously and against one's will. This is especially the case with the hypnotizing of animals. In childhood many of us have doubtless amused ourselves by hypnotizing a crawfish, which is easily done by supporting its head and claws and softly rubbing its bent tail, when for many minutes afterward it remains motionless in full hypnosis. The experiment of Father Kircher, in 1646, with the hen that lies motionless on the ground if a long line is chalked from her bill, has often been repeated. To the same class of phenomena belongs all kinds of charming by the eyes or *fascination*, as when the snake-charmer by his eye tames serpents, or when snakes paralyze frogs; as also the art of Rarey, the famous horse-tamer, which appears to have consisted principally in hypnotic manipulations.

The various hypnogenic processes which have been used up to this time may be classified in two large principal groups, *physical and psychical*. The first includes such as affect the nervous system, especially the sensory nerves, by causing a state of fatigue or relaxation in certain senses, partly by producing a certain inhibitory condition of the brain. The second act principally by suggestion of which more will be said later on. Among the first, those that affect the sense of sight seem to be the most powerful. To these belong the fixing of the eyes on some shining object and also the steady gazing of the subject at the eyes of the hypnotizer; or following with the eyes the customary magnetic strokings; or the effect of suddenly lighted flame such as a magnesia-light, an electric spark, or exploding gunpowder. Even the staring at one's own image in a looking glass may produce hypnosis. Thus Dumontpallier tells of a woman, who, when combing her hair before a mirror—in which she must have surveyed herself rather intently—fell into catalepsy and remained motionless, with both hands over her head in the attitude of combing, until D. awakened her by staring at the reflection of her eyes in the glass.

A sudden affection of the sense of hearing, a blow on a gong for instance, often causes an equally sudden sleep (catalepsy), especially in hysterical persons who are accustomed to this way of being hypnotized. A laughable occurrence of this kind in La Salpêtrière in Paris is related by Richer. An hysterical woman was suspected by the physicians of stealing photographs from the laboratory of the hospital, but she repelled the accusation with scorn. One morning, however, Richer found her standing with her hand outstretched in the box of photographs. He approached; she did not move. At the moment of her reaching for the photographs a gong had been sounded in an adjoining room in order to hypnotize another patient, and immediately she had fallen into a hypnotico-cataleptic state.

The best notion of the means of hypnogenic processes will be gained from a description of the different methods that have hitherto been used by the most prominent magnetizers and hypnotizers.

Mesmer sat down down opposite the person who was to be mesmerized, grasped his hands, and stared at his eyes. After ten or fifteen minutes he let go his hold and made strokings with his hands at a distance of a few centimetres from the body of the medium, from the top of the head slowly downward, letting the tips of his fingers remain for a few moments on the eyes, the chest, the pit of the stomach and the knees. This was repeated ten or fifteen times; if any effect appeared the *séance* was continued; if not, the experiment was not renewed until another day. Bot as time did not allow the magnetizing of each person separately, and Mesmer besides maintained that the magnetic fluid could also be stored in various objects, he soon resorted to the more convenient method of magnetizing indirectly, through magnetized tables, "*baquets*," trees, flowers, magnetized water, etc. Real mediums must feel a difference between magnetized water and ordinary water. Through the former they fall asleep, through the latter they do not.

The Indian magnetizers, of whom Dr. Esdaile of Calcutta made use in 1840—1850, proceeded thus: the medium, partly undressed, was put to bed on his back in a dark hall. The magnetizer placed himself at the head of the bed, leaned over the medium, bringing his face almost in contact with the latter's, stared at his eyes. One hand rested on the pit of the medium's stomach, the other made strokings, principally over the eyes. Moreover, he blew softly and frequently into the nose, between the lips and on the eyeballs. The deepest silence prevailed during the entire proceeding.

Others use only the method of fixing each other's eyes—as Teste and Cullerre.

Braid's method, widely known and used, consists in letting the medium stare at a shining object, a glass knob or some such thing, which is held a couple of inches above the root of the nose, so that the they are obliged to take a position that makes them converge strongly

upward, by which the muscles of the eyes get tired or the optic nerve becomes over-irritated. Also it is of importance to concentrate the attention upon the thought, that sleep may follow. This method easily causes tears and headache. It was used a great deal by the Danish magnetizer Hansen. In ancient times, staring at mirrors, at the glistening surface of water &c. was used.

The priest *Faria's* method belongs among the purely psychical. It consisted in suddenly frightening the inattentive into sleep. He used to rise suddenly, stretch his hands toward those who were to be hypnotized, and to cry out in a stern, commanding voice: "Sleep!" if four such attempts proved unsuccessful, the subject was declared to be insusceptible. This simple and convenient method, however, seldom succeeds, and when it does, it rarely causes any deep sleep and must be supported by other methods.

Lasègue has subdued refractory mediums by closing their eyelids with his fingers and by gently pressing on their eyeballs.

Charcot's school at La Salpêtière has modified the Braid method, by placing pieces of glass close to the bridge of the nose, by which procedure the convergency of the eyes is increased and sleep comes more rapidly. A blow on a gong or a pressure on some "hypnogenic or hysterogenic" zone—such as an ovary, the top of the head, etc.—or the appoaching of a magnet will act on hysterical women.

Gessman of Vienna describes* his method *in extenso* thus:

"I choose out of the company a woman having a pale and nervous appearance and dreary eyes; I tell her that there is in my organism a strong evolution of electricity, which enables me to electrize persons who are not too robust. As a proof of this, I let her with both hands seize two fingers of my right hand, and after a few seconds, I ask whether she feels anything. If she is susceptible to hypnotism, she usually answers that she feels a crawling sensation, and later a numbness of the arms and upper part of the body. Then I say: 'Hold my hand tight—tighter—tighter still—well! Now you cannot let go my hand!' And the fact is that she can not. By strokings of my left hand along her arms the muscular spasm increases, so that she can not let my hand go even when asked to do so. Blowing on the hands and telling her that she is free immediately stop the spasm.

"By this preliminary test I get a sure proof that the person is susceptible to actual hypnotization, which is produced thus: I sit down opposite her, make her close her eyes, take her hands in mine so that the four thumbs are pressed against each other, tell her to be quiet, and to yield unresistingly to the first inclination to sleep. When she has fallen asleep—generally within ten or twenty minutes—I increase the sleep by some strokings over her head and chest, and try to induce her to talk; this I easily achieve by placing one hand on her

*G. Gessman, Magnetismus und Hypnotismus. Vienna 1887.

head and taking one of her hands in my other hand, while I—speaking towards the pit of her stomach—ask: 'Do you hear me?' which question must often be repeated four or five times, before I receive a very weak answer. Now is the time to make further experiments. At the first attempt, however, one should stop here, so as not to tire the the patient. After twenty minutes, at most, she should be wakened,—which is done by the simple command: 'Awake!' Yet she may first be asked if she feels well, and be assured that after awaking she will feel entirely healthy and normal. If she herself prescribes some way in which she desires to be wakened, her wish should be heeded. If a simple order does not succeed in waking her, you may blow in her face, or make reverse strokings, but violent means, such as vigorous shaking, sprinkling with water, etc. should never be used; nor should strange persons be allowed to come in contact with her. If she still does not awake, she may be allowed to sleep for ten or twenty minutes more, provided pulse and respiration do not give cause for apprehention. Generally she awakes within that time of her own accord."

Thus we find that hypnosis can be produced in the most widely differing ways, and it can be said with Richer, that all methods lead to the desired aim, provided you find a well predisposed organism; for the oftener a person is hypnotized, the more easily will the sleep be reproduced. A review of the difierent methods shows that among the physical methods that affect the senses, those which act upon vision, hearing and sensation are the most powerful but that the senses of taste and smell may also be used. The sense of sight is affected either by rapid and strong irritation, as by a ray of light thrown into the eye from the sun, from a magnesium lamp, from an electric light, or by slow and weak irritation as by staring at a dazzling object, at the eyes of the hypnotizer, etc. The sense of hearing is irritated either suddenly and vigorously by a gong, tomtom, tuning fork, or slowly and gently by the monotonous ticking of a watch or by other unvaried sounds. We remember how natural sleep is promoted by monotonous songs, such as cradle-songs, dull sermons, etc. The sense of touch is irritated by rapid, strong pressure upon the ovary or other particularly sensitive spots—hypnogenic zones so-called—or by gentle pinching, heat, magnets, etc. That heat is a hypnogenic agent was shown by Berger, who succeeded in hypnotizing, when he held a heated metal or his warm hand in the neighborhood of the patient's head, but he did not succeed when the hand or the head was covered, so that the radiation of heat was prevented. Binet and Féré have succeeded in producing lethargic sleep by exhausting the sense of smell by musk. To act upon the sense of taste has been tried less, but it has sometimes succeeded.

Without directly stimulating the senses of sight or hearing hpynosis may be produced by mere pressure on the eye or ear—as when

the finger presses on the eyeball through the closed eyelids, or on the external auditory canal. Whether, as has been supposed, the nerves of the eye or ear are affected or tired hereby, is hard to decide.

The strokings, or "passes," so much affected by magnetizers, have perhaps a direct physical effect on the sense of feeling, when they touch the skin; but when they are made at a distance, their influence on vision and their purely psychical effects probably play the principal role. In modern times, it has been discovered that efficacious excitation, of the skin may be made with a feather or any inert body, just as well as with the hand. Some parts of the body, however, are especially sensitive—as the top of the head, the forehead, the ovarian regions, the root of the thumb, the joints, etc.—spots which have been described by Pitres as "hypnogenic zones." Hypnotizing by a magnet shows that the excitation, need not be consciously conceived in order to be efficacious.

All these physical hypnogenic processes have very different effects on different individuals; some persons are more easily influenced by one, others by another; a combination of several processes is often more efficacious than one alone. Though these physical processes act independently of the personality of the hypnotizer, who thus is not of so great importance as was claimed by the earlier magnetizers, yet it will be found that some hypnotizers succeed better than others. which fact must depend upon the great importance of the psychical influence in hypnotizing. For hypnosis is caused not only by the above-mentioned peripheral or sensorial excitations, but also by central excitation in the brain, by psychical action on the imagination, or by *suggestion*—as it is called in modern language.

Faria's method, mentioned above. was of this kind. Milder and less terrifying methods of suggestion are used now, however. You say, for instance, to the one you wish to hypnotize, that he needs sleep; that he will soon be asleep; that he is feeling dull; that his eyelids are closing; that he can no longer hear nor see; or you yourself pretend to be sleepy or asleep. This method is especially successful with those who have been hypnotized before in other ways, or those who are desirous of falling asleep in order to go through an operation or something similar, or who have implicit faith in the skill of the hypnotizer. It is by this method that hypnotism can be caused from a long distance and after a long time. In such cases there is no magnetic fluid that is transmitted from the magnetizer who acts from a distance. but it is the fixed idea of the patient, that he is just then put to sleep, which produces the sleep. But he must previously have been notified of the day and moment of his going to sleep, either by agreement, that he, though at a distance, shall be hypnotized just at that time; or by the order, during a previous hypnosis that just then he shall go to sleep again: in the latter case the patient need not remember this order while he is awake.

The effect of magnetized water, magnetized trees, letters, and other objects, so wonderful in by-gone days, is easily explained in the same manner. Without a confirmed idea of the power they are to possess, they produce no effect. But we shall have occasion to develop this interesting subject further, when we come to discuss the psychical effects of hypnotism. Often, however, it is quite difficult clearly to decide how great a part the psychical and physical agents have in producing hypnosis. Generally, however, it may be safely said that although suggestion, or the psychical momentum, does not alone dominate the hypnotism, yet it is usually of greater importance than was formerly supposed. But on the other hand, it may be mentioned as a sure proof that hypnotic sleep can be produced even without a more or less conscious co-operation, that hypnosis may also be successfully produced in a person who is in a deep natural sleep, simply by pressure on his eyelids.

Finally, it should be remembered that the fixed idea can be directed not only to cause sleep, but equally well to prevent and oppose the sleep. If anybody firmly makes up his mind not to be put to sleep at such a time, in such a manner, or by such a person, the experiments generally fail, even if they have succeeded ever so well before, when the patient was willing and prepared.

The methods of awaking the subject from the hypnotic state or of *dehypnotizing* are also many and varied. Moreover, these can be divided into physical or peripherally acting and psychical or centrally acting. The simplest and most common method is to blow on the eyes or forehead. This may be done with a pair of bellows instead of with the mouth; or a few drops of water may be dashed on the face. If this proves unsuccessful, the eyelids are raised and the blowing is made a little stronger straight into the eyes. If then awakening does not follow, pressure may be made (in hysterical women) on the ovarian region or on other hypnogenic zones. For by pressure on the same spot, many hysterical persons can be hypnotized when awake, and wakened when asleep. The same means seems to have opposite effects, depending on the state of the persons. Blowing on only one half of the head, while the other half is separated by a screen, wakens only one half of the body. The subject is wakened psychically by the simple cry "Awake!" addressed to him.

CHAPTER IV.

STAGES OR DEGREES OF HYPNOTISM.

THE effects or symptoms of hypnotism are so many and so different in different individuals and in different stages, that it is hard to give a picture that shall correspond to all the hypnotized. It may generally be said that hypnotism causes changes within the limits of both the physical and the psychical life, often of so strange a kind as to border on the wonderful. In order to reduce to something like system the complicated phenomena producable by hypnotism, some authors have divided the hypnotic sleep into certain *stages* or *degrees* of intensity, while others have classified the symptoms into certain *main groups.*

Among the former may be mentioned *Kluge* (Berlin, 1811) who gives no less than seven degrees: 1, Waking: the sensory organs are still in full activity, but the limbs have slightly increased functions. 2, Half-sleep; incomplete crisis; feeling of heaviness in the eyes, which close; but the patient can hear and is not yet asleep. 3, Magnetic sleep; restful, deep, refreshing slumber, without memory on waking. 4, Simple somnambulism; talking and acting in the sleep under the influence of the magnetizer; the "*somniloque*" and "crisoloque" of the French. 5, Clairvoyance, with increased interior consciousness. 6, Ecstacy; far-seeing in time and space; conception of past, present and future events, which is otherwise lacking in the ordinary conscious state. 7, Trance.

This classification was also approved by the great practical physician, *Hufeland*, with the exception of the 7th degree.

Eschenmayer (1816) adopted only four degrees, based on the psychological classification of the mental faculties, as perception, imagination, sensation and fantasy: 1, *Magnetic perception;* removing the senses to the pit of the stomach or to the finger-tips and toes; penetration of the condition of other persons, increased internal instinct. 2, *Magnetic clairvoyance;* 3, *Magnetic sympathy* with the magnetizer; and 4, *Magnetic divination.*

While these magnetic systems prevailed in Germany, the French generally favored that which was started by *Lausanne* (Paris, 1818), and which was still richer in "degrees"—as many as twelve—of which the first eight were considered as merely "half-crises," and only the last four as real crises. These degrees were 1, Sensation of heat or cold. 2, Heaviness in head and limbs; the eyes close. 3, The patient hears but cannot answer. 4, Light slumber; the dreams are remembered. 5, Deep sleep. 6, Sweet and light sleep; feeling of delight after it; 7, Apparent sleep; motionless body; the somnambule hears and answers questions. 8, Dim perception of the disease; sympathy and

antipathy for different persons. 9, Clairvoyance of his own body; self-prescription; cure predicted. 10, Incomplete clairvoyance of other persons' bodies. 11, Complete clairvoyance of other persons' bodies; remedies ordered and cure predicted. 12, Far-seeing and prediction.

The system shows on how low a level the scientific elaboration and explanation of magnetism still remained.

Another system, "so symmetrical that it can be drawn in three connecting ellipses of unequal length," (!) was devised in 1826 by the famous German psychiater *Kieser*. He classified the phenomena as belonging to the falling asleep and to the awakening, and he made either pass through one vegetative, one animal, and one sensitive stage, from which six different stages arose.

Ennemoser (1852) was the first who made the very essential difference between *physical* and *psychical* phenomena.

Finally, if we turn to the hypnotic systems which prevail to-day, that adopted by Charcot and the Salpêtrière school occupies the first place. But as this is based principally on experiments on hysterical women, the system adopted by Liébault and the school of Nancy would perhaps be of more general importance.

Charcot accepts three main stages: 1, *The cataleptic*, 2, *The lethargic*; and 3, *the somnambulistic* stage. In the description of these stages or phases, we follow Dr. Paul Richer, Charcot's pupil, who extensively treats this in his great work on hysteria.*

The cataleptic state occurs primarily under the influence of an intense and unexpected noise, a strong light placed under the eyes, or by staring at some object according to Braid's method. Concentration of the attention, of the imagination, or even of a moral impression, may also produce catalepsy. Besides it develops from the lethargic state if the already-closed eyes are suddenly exposed to rays of light, by the raising of the eyelids. On the inhaling of ether or chloroform, a transient cataleptic state sometimes occurs before the narcotic stage. Even in healthy persons a passing catalepsy sometimes takes place under the influence of a sudden emotion (fear, wrath, etc.). A suddenly frightened person may become motionless as a statue, stiff and rigid, without feeling, and with hands and arms fixed in some expressive posture. Either by reason of the noise or through fright, a peal of thunder sometimes has the same effect as the striking of a gong. Even the faculty of speech may in this way be lost for one or more days.

The cataleptic stage comes on slowly or suddenly, the former generally by the use of Braid's method, which often can not even produce this stage, but will instead cause the lethargic one. If, however, it is desirable to try this method, the staring at the object should suddenly be interrupted, shortly before the occurrence of the lethargic stage, when the cataleptic stage will appear instead. Yet a certain

* P. Richer, Études cliniques sur la grande hystérie, ou hystéro-épilepsie. Paris, 1885.

co-operation of the will of the one hypnotized is here needed, contrary to the sudden causing of catalepsy by other methods—as by an electric spark, or a blow on a gong—when the catalepsy occurs quite involuntarily. Those hypnotized in this way remain motionless in the same place and position they occupied when the sudden noise or other hypnotizing influence befell. Generally a certain fear is expressed in their faces.

The characteristic feature of catalepsy is the *immobility*, the statue-like attitude. The eyes are open and staring; the tears accumulate and run over from want of motion in the eyelids; respiration has almost ceased. Without apparent fatigue, the limbs retain the most difficult positions in which they are placed, but make no resistance to change of attitude. Muscular reflex-action is absent, as also the increased nervous irritability of the muscles, characteristic of the lethargic state. By mechanical irritation of muscles and nerves contraction is not produced, but rather a loss of elasticity. The skin is insensible to the strongest irritation, but certain senses—such as the muscular sense, vision, and especially hearing—partly at least retain their activity, by which they are susceptible to suggestion. A communicated position produces ideas in the brain corresponding to the attitude; it also produces mimic expressions and motions in the same direction. So, for instance, if the fingers of the cataleptic person are placed on his mouth in kissing position, a smile will appear on his lips.

Catalepsy ceases, either by return to normal condition or by changing into lethargy. A slight irritation,—such as blowing in the face, or pressing on the ovaries in hysterical persons—is enough to awaken the cataleptic. At once the subject returns to the real world. The closing of the eyelids or the softening of the light will, on the contrary, transfer them to the lethargic state. If only one eye is closed, while light enters the open one, the lethargy occurs in only the half of the body corresponding to the closed eye, while the other half remains cataleptic. We shall return later to these very interesting, one-sided hypnotic phenomena, which prove a certain independence of the separate halves of the brain.

The lethargic state can be primarily produced by staring, or by continuous gentle pressure upon the eye-balls through the lowered upper eyelids. The time required to produce this phenomenon varies in different individuals, and decreases gradually by practice from ten or fifteen minutes to a few seconds, but the lethargic state can never be so suddenly caused as the cataleptic can sometimes be. As before mentioned, the former state may also arise by transmission from the last-named by a simple closing of the eyelids or from the somnambulistic state by pressure on the closed eyelids. The lethargic state is often preceded by some epileptic phenomena, such as motions of

swallowing, guttural sounds, asthmatic respiration, foaming mouth, or rigidity of the limbs. The principal characteristics of lethargy are: complete insensibility of the skin and mucous membranes, increased irritability of the motor nerves, and as a rule, insusceptibility to suggestion or imparted hallucination. The eyes remain closed or half-closed, turned upward and inward, the eye-lids generally trembling. The body is perfectly relaxed, the limbs are lax and pendent, and fall heavily back, if lifted and then released; respiration is deep and quickened. The spinal cord is in an over-excited state and the reflex action of the tendons increased, that is, the corresponding muscle, or sometimes even others, will contract by percussion or stroking on its tendon. The muscle can also be excited directly. The contractions, thus easily caused, often remain until they are released by excitation of the antagonist muscles. By opening one or both eyes, the lethargic state can be immediately tranferred to the cataleptic state in one or both sides.

The somnambulistic state—psychologically the most interesting—is produced either primarily by staring or other ordinary methods of hypnotizing, or secondarily from the cataleptic or lethargic state by a gentle pressure or friction of the hand on the cranium, sometimes also spontaneously. It is the somnambulistic state that is generally produced by magnetizers, and by all the methods which act upon the imagination.

The somnambulistic state is characterized by the same insensibility to pain, of the skin and mucous membranes, as in the lethargic state, but the senses are often quickened to a high degree; the muscular irritability is normal; there is no increased sensitiveness as during lethargy; by excitation of the cutaneous nerves muscular contraction is caused, which, however, does not change into lasting contraction —contrary to the lethargic state, where contraction is caused only by excitation that reaches through the skin to a muscle, nerve, of tendon. The eyes are generally closed, but may also be half or wholly open, yet without winking of the eyelids.

Pressure on the eyelids immediately causes lethargy; pressure on the eye produces hemi-lethargy of the corresponding half of the body, while the other half remains semi-somnambulistic.

The mental faculties of the somnambulist are highly sharpened; he answers questions and is easily led through the most varied suggestions. There is hardly any limit to what can be produced by suggestion, and the actions of the somnambule often border on the marvelous. The "automatism" (unconscious spontaneity) of the somnambulist differs from that of the cataleptic. The latter is a mere automaton, a machine, acting without consciousness, without aim, blindly obeying external sensorial impression. The somnambulist, on

the contrary, is a subject, a personality, who acts spontaneously, by his own impulse, or obeying the will of the operator, yet with a certain independence, a certain consciousness peculiar, however, to the new somnambulistic personality, and which does not return to memory with the wakeful condition. Thus there is a somnambulistic ego, but no cataleptic ego. An example is necessary, however, to explain this fine distinction. On a table before a patient in the cataleptic state, are placed a picher of water, a washbowl, and soap. As soon as these objects are seen or touched, he immediately begins to pour out water in the bowl and to wash himself with great care; if a towel is given him, he wipes himself carefully. If pressure is made on the top of his head, he is immediately changed from a cataleptic automaton to a somnambulist; he immediately ceases to work and asks in astonishment: "What am I doing? I certainly do not need to wash my hands!" But now it is only necessary to raise his eyelids to bring him back instantly to the cataleptic automatism, and without objection, without reasoning, he will renew his continuous washing. If now his right eye be closed, his right hand will drop inactive, and the washing will be continued with the left hand alone; he is now hemi-lethargic, that is, in his right side. If then, his left eye be closed, the left hand will also drop; all washing ceases, and he is wholly lethargic. In the cataleptic state, he can in the same way be made to roll a cigarette, to light it, to smoke it; but care should be taken lest he burn himself, for he is entirely insensible to pain.

The hypnotic phenomena, however, do not always appear as regularly and decidedly, as in the stages defined by Charcot, now briefly described; nor in the order in which they have been set forth. There are numerous transitory and mixed stages, and many observers (Magnin etc.) have found the order reversed, so that the hypnotized first enter into the somnambulistic state and afterward into the lethargic and cataleptic stages. As habit here plays an important role, they may depend upon a certain training, and upon the order in which the hypnotism takes place. We must therefore remember that Charcot's system is to be understood merely as a general outline, from which there are many variations.

The school of Nancy does not cling so vigorously to the difference between the three stages; they divide the hypnosis into several degrees from the lightest to the deepest sleep; attribute more importance to suggestion; and have shown that hypnosis can be produced, not only in hysterical women, but also in healthy persons, both men and women. Finally, they have very clearly set forth the great practical significance of hypnotism.

Below is given a synopsis, made by the Italians, Tamburini and Sepilli, which in a comprehensible way displays the main characteristics of the different stages of hypnotism.

Synopsis by Tamburini and Sepilli.

	1. Lethargic state.	2. Cataleptic state.	3. Somnambulistic state.
a) Motility.	Increased muscular contractility and reflex irritability; rapidly appearing paradoxical contraction; sensibility to æsthesiogenic excitation, especially to the magnet.	Plastic flexibility of the joints; lessened reflex irritability; slowly appearing paradoxical contraction; the magnet without influence.	General and continuous contracture, which cannot be released by repeated excitation, nor by activity of the antagonist.
b) Sensibility.	Sharpened hearing.	Complete insensibility.	
c) Respiration	quickened and deep; the magnet affects the respiratory muscles	slow and superficial; the magnet without influence.	
d) Circulation.	Peripheral vessels distended; the pulse-waves change with the phases of respiration.	Peripheral vessels contracted; the pulse-waves do not change.	

CHAPTER V.

UNILATERAL HYPNOTISM.

A CLASS of phenomena that we have hitherto but lightly touched, but which deserves special attention is *hemi-hypnotism* or *one-sided* hypnotism, also called *unilateral* hypnotism, and consisting of

the development of hypnotism in only one half of the body, or of different forms or degrees in opposite sides.

It is well known how the nerves of each half of the body cross each other in the medulla oblongata and run to the opposite hemisphere of the brain. Thus each half of the brain governs its separate half of the body—the opposite—with a certain independence; through the transverse commissural fibres there is also, however, a connection between the two sides of the brain. By various processes that act especially on the nerves of one half of the body, one side of the brain and the corresponding half of the body may be hypnotized.

Braid succeeded in awakening only one half of the body by affecting one eye. Heidenhain produced hemi-lethargy, or lethargy in one side, by friction upon one side of the head, and when the friction was applied to the left side, he also produced *aphasia* or loss of speech, as the speech-centre is situated in the left temporal lobe of the brain. Berger found that friction of the region of the neck on one side of the head caused catalepsy of the same side, while friction of the temporal region produced catalepsy of the opposite side. By one-sided friction of the head Ladame succeeded in producing color-blindness of the eye of the same side, while the other eye distinguished the colors normally. Dumontpallier has caused one-sided hypnotic phenomena in hysterical persons and afterward *transferred* the phenomena to the opposite side through "transferrers" so-called, that is; by the application of metals or magnets.

Furthermore, different states or stages of hypnotism have been produced at one time in the two halves of the body. This is often done in Charcot's clinic, where it was first exhibited by Descourtis in 1878. It is only necessary to open one eye so that light strikes the retina of one who is in a state of general lethargy, and he will immediately become cataleptic in the corresponding side, while he remains lethargic in the other. On the other hand hemi-lethargy may be produced in a cataleptic individual by the closing of one of his eyes.

By approaching a ticking watch to one of the ears of a hysterical woman, Dumontpallier caused hemi-catalepsy of that side, and at the same time hemi-lethargy of the opposite side, whereas general catalepsy appeared when he placed a watch at each ear. Hemi-lethargy can also be produced by the inhalation of ether through only one nostril.

Finally, hemi-lethargy and semi-somnambulism have also been produced at one time, as have also hemi-catalepsy and semi-somnambulism.

But even the same hypnotic state may at the same time show a different degree or character in different sides, especially when the separate halves of the brain are given separate impressions and ideas by suggestion. Here is an instance:

A girl is put into a cataleptic state. Her left hand is placed in a

position corresponding to that of throwing a kiss; she now smiles with the left half of the face. While the left side continues to keep this position and expression, her right hand is given a posture of aversion, and the right half of the face will immediately assume an expression of fear and horror, while the left half of the face continues to simper with satisfaction. Strange as it may seem, this phenomenon, which shows the independence of the brain-halves relatively to each other, is however, at the present standpoint of brain-physiology, quite easy to explain.

Every muscular action is conceived by the opposite half of the brain through the sensory nerves which go to it. Every oft-repeated ordinary combination of muscular actions and positions produces corresponding impressions of memory on the brain-cells; through this, the moods and ideas are caused which are generally connected with those movements. By reflex action and association, movements and positions are completed, so that, for instance, the mimicry of the face harmonizes with the posture of the hand. During hypnotic sleep the wakeful consciousness is absent, which comprehends the ego as a unit, that, so to speak, joins the two halves of the brain together into one combined whole. Each hemisphere works automatically for itself, and the direct, involuntary reflex movements are absolute masters of the situation.

These ideas, illusions, hallucinations, etc. can be imparted to the separate hemispheres, not only through the muscular sense but also through all the other senses, and usually through *suggestion*, about which more will be said in a special chapter. For instance, give a hysterical individual, in the somnambulistic stage, a few drops of water on one side of her tongue and tell her that it is vinegar; then, let some drops of the same water fall on the other side of her tongue, and tell her that it is molasses, and she will express astonishment at feeling a sweet and a sour taste in her mouth at the same time, and usually one half of the face will show discontent and the other satisfaction. In the same way double illusions can be produced with the sense of smell. So also with hearing. To one ear something pleasant may be told, to the other something unpleasant; the different hallucinations of hearing produce reverse expressions in the two halves of the face. While one ear is acted upon, the other should be covered. If different pictures are exhibited to the two eyes, while their circles of vision are separated by a partition, double hallucinations will arise with corresponding double facial expression. If now the individual be suddenly wakened, the two halves of the brain still continue for a while to act independently. The different hallucinations and the different facial expressions still continue; and under the influence of the two opposite ideas the merriest laughter may rapidly alternate with shrieks of horror, just as on awaking from a dream the mood is

dependent on the contents of the dream, until the thoughts can be collected and the person has awaked by getting a perfectly clear conception of the facts of the wakeful state.

Hence there is no doubt but that the separate hemispheres of the brain have each a separate and independent activity to a certain extent and under certain conditions, especially during hypnotic sleep. But the consequences should not be hence drawn that all the contrasts of mental life in the same individual are dependent on this; for instance, that one hemisphere is the seat of man's better self, the other of his worse self; one for the good instincts and thoughts, the other for the bad ones; or that, in a criminal, one hemisphere should plan the crime while the other warns and condemns; or that in an insane person who is conscious of his disease, only one half of the brain is deranged and the other half is aware of it. There is no such division of the ego, no double personality. The above-named contrasts within the mental life depend on a brain activity, differing more in time than in space; they are successive utterances of the activity of the whole brain.

CHAPTER VI.

PHYSICAL EFFECTS OF HYPNOTISM.

HYPNOTISM extends its effects in different individuals and in different stages more or less to all the organs of man, not only to his organs of motion and sense but also to his brain and its functions, as well as to the vegetative functions of life: respiration, circulation, nutrition, etc. For a more convenient review of all these varied effects, we will now give special attention to the effects of hypnotism on each separate system of organs, and, postponing to a separate chapter its most remarkable effects—those pertaining to the higher mental life—we will now in this chapter, discuss the purely somatic or physical phenomena, as opposed to the psychical.

The organs of locomotion. The muscular system shows a striking sensitiveness to hypnotic influence, but, as has already been mentioned, very differently in different stages, sometimes showing a relaxation bordering on paralyzation, sometimes extreme irritability, disposition to contraction, spasm, tetanus, etc. The external signs of these different conditions of the muscles manifest themselves not only in the form and hardness of the muscles themselves but above all in the posture and mobility of the limbs, and with reference to the facial muscles in the mien and mimicry of the face. If the muscles are relaxed, as in the lethargic state, the body collapses like a rag, arms and legs lack control, give no support to the trunk, and the position of the body is entirely governed by the laws of gravitation and by the doings of others. The cataleptic state, on the other hand,

causes a certain semi-rigidity of muscles and limbs, besides an abnormal endurance and passivity, so that the limbs can be bent like wax (*flexibilitas cerea*) and maintain the most tiresome and unnatural positions, far longer than in the normal state, so that the person resembles a doll of soft wax or gutta-percha, to which can be given any position desired. Such catelepsy is also found in certain severe forms of mental disease.

Another hypnotic muscular anomaly is the general rigidity or tetanus, which is sometimes produced by a mere breathing on the neck. By this a sudden and continuous contraction of all the muscles of the trunk and extremities arises, just as a frog poisoned by strychnia becomes tetanized at the slightest touch. The whole body becomes rigid as a stick and the muscles as hard as stone. It is this experiment that is so much abused by professional magnetizers, who boast of their cruel trick of letting a tetanized person stay suspended between a couple of chairs, with support for only the neck and feet, and of even sitting upon the unfortunate victim, to show the hardness of his tetanized muscles. Such experiments are so much the more dangerous in that the tetanus may also extend to the respiratory muscles and the heart, when life is endangered. Even very gentle attempts to tetanize one muscle or another by special friction may have dangerous results, as the tetanus sometimes shows an increasing tendency to spread to other muscles or groups of muscles. Thus by merely rubbing the muscles of a student's left thumb, Heidenhain caused a successively appearing tetanus of the left thumb, left hand, left forearm, left upper arm and shoulder, right shoulder, and upper arm, right forearm, right hand, left lower leg, left thigh, right thigh, right lower leg, the masticatory muscles and the muscles of the neck. The general spasm was however at once dispersed by a blow on the arm or by bending the thumb that was turned in toward the hand.

By pressure, percussion, friction, or in other words, by mechanical excitation, especially during the lethargic stage, partial contraction of the manipulated muscle may be successfully produced, which contraction is again dispersed by excitation of the antagonist, that is, the muscle that acts in the opposite direction. In this way the most varied mimical expressions of joy, pain, fear, wrath, astonishment etc. may be produced by excitation of special muscles of the face. According to the method of Duchenne, a small stick, round at the end, by which pressure is made on such points of nerves or muscles as have shown sensitiveness to faradic excitation, completely substitutes the electric current, during the lethargic state. According to Richer, however, these experiments require much care and experience. If the pressure is too weak, only a slight trembling appears in the muscle: if it is too strong, the excitation is communicated to more muscles

which contract at the same time. The muscles of the face are unlike those of the limbs, inasmuch as their contraction usually ceases as soon as the excitation ceases and does not become permanent. If a muscle, which has a corresponding muscle on the other side, be irritated, it will often happen that the "homologous" muscle is made to contract by excitation of the first one. A further description of how the physiognomy changes and assumes characteristic expressions for certain affections by excitation of certain muscles would be very interesting, but in order to be understood, it requires of the reader a special knowledge of the muscles of the face, which we do not dare to pre-suppose.

The contractions which are produced in the muscles of the limbs have a great tendency to persist. This contraction is most easily relaxed by excitation of the antagonist muscles: thus, contraction of the flexors of a limb is removed by excitation of the corresponding extensors. But the contraction usually disappears of its own accord if the patient is wakened during the lethargic state. Sometimes, however, the contraction remains on awaking, especially if the patient has previously been made cataleptic. These contractions, which greatly resemble the hysteric, can not then be stopped by anything but the excitation of the antagonist muscles, after the patient has again been hypnotized.

During the somnambulistic stage contractions may also be produced, yet more by excitation of the skin than by direct excitation of the tendons or nerves. These fine distinctions however will interest the reader less than will the perceptible changes that hypnotism causes in the *sensitive* organs—the general sense of touch in the skin as also the special organs of the senses. The conditions in this respect vary greatly in different individuals and in different stages. Sometimes increased sensibility is found, sometimes lessened: sometimes sharpened senses, sometimes duller. A constant feature and one common to all hypnotic stages however is insensibility to pain (*analgesia*) from pricking, pinching, burning, etc., while the sensibility to touch may at the same time remain in the skin. During lethargy, all the senses are usually entirely inactive, except hearing, which may sometimes be weakly active, especially when aided by a speaking-tube placed in the ear. Although the one who is thus addressed can not answer, a twitching or an increased respiration is often noticed. When asked if he can hear, he may assent by a nod but he cannot articulate a sound. If requested to speak, he will shrug his shoulders as a sign that it is impossible for him. If he is ordered to rise, he does not do so, or only slowly after long hesitation. When once risen, he stands staggering, with shaking legs, and cannot move a step. He is insusceptible to suggestion. If he is told: "Look at that bird!" he only shakes his head; he does not see anything. If the speaking-tube is removed from his ear, he can usually hear no more.

In the cataleptic state the senses are a little more active, while the general sensibility to pain is completely absent. By affecting the special senses, sight, hearing, smell and taste, a number of ideas can be imparted to the cataleptic; but the muscular sensibility is specially acute, and through it characteristic attitudes can produce corresponding ideas in the brain.

Also in the somnambulistic stage sensibility to pain is usually absent; but this phenomenon sometimes varies in the same individual at different times; sometimes the sensibility to pain is even increased. The other senses also show variations. Some are benumbed, others highly sharpened, especially the senses of temperature and touch. The mildest current of air is then felt with the greatest acuteness even at a distance of several yards. The attraction to certain persons seems to depend on increased sensibility (*hyperæsthesia.*) The somnambulist who is hypnotized by the pressure of my finger on the top of his head, afterwards follows me like a faithful dog. If I absent myself, he grows nervous, follows me and holds on to me. This does not seem to depend on any mystic "rapport" between the hypnotizer and the hypnotized, but on some special unconscious modification of the sense of touch, as is easily proved by the following experiment. The patient is hypnotized by some one. Two other persons approach and each grasps a hand of the somnambulist. Which will she follow? Which gets now her sympathy? Well! it is divided between the two; she grasps with equal firmness the hands of both.

Many interesting observations have been made with reference to an extreme sensibility of the skin, and in this hyperæsthesia is found the most reasonable explanation of many wonderful phenomena in the somnambulists such as their ability to help themselves without the aid of their eyes, both in walking and in judging about objects near them. Braid has pointed out, that the somnambulist's pretended power of seeing with some other organ than the eye, is an error; that when with blindfolded eyes he describes the shape of an object held at a distance of one or two inches from the skin of his neck, head, arm, hand or other parts, the perception is imparted through the extremely sharpened sense of temperature of the skin, besides the power of the object of radiating or absorbing heat. The sense of hearing is also sharpened, according to Braid, to fourteen times the normal. This same writer also mentions the case of a lady who had so acute a sense of smell, that at a distance of forty-six feet, blindfolded, she could follow a rose just as surely as a hound follows a hare.

In modern times, Berger of Breslau, has specially submitted the question to close investigation. The slightest touch of a hair upon the skin is felt by the somnambulist and accurately localized. With Weber's instrument for measuring sensibility, Berger found the sense of space of the skin to be three times sharper than the normal. Also

the senses of pressure, temperature, hearing, smell and sight were measured by Berger and were found sharpened.

In hysterical women, Dumontpallier could produce muscular contractions by such gentle means as the ultra-red and ultra-violet rays of the Drummond light refracted through a prism, or by sound waves, directed to the skin by means of a rubber tube. The ticking sound of a watch, directed in the same way, produced muscular movements repeated even in the same rhythm. It was probably this sensibility of the skin to the slightest air-current which acted when the ancient magnetizers succeeded in producing muscular contraction by merely pointing at a muscle from a distance.

In spite of the opposite statements of Braid and Azam, the sense of sight can also be highly sharpened. A remarkable proof of this was exhibited a couple of years ago by Taguet, before the medico-psychological society of Paris. A young girl had from childhood shown the ordinary symptoms of hysteria. At nine years of age she had had hystero-epileptic fits. After many vain attempts she was at last successfully hypnotized, and then several interesting phenomena appeared, which by this author are described thus:

"While Noëlie is in a convulsive crisis, in catalepsy, or in lethargy, which we successively cause by different pressures, we draw on her face some lines, with a lead pencil or with ink, some distinct, others hardly noticeable. We now put her into a somnambulistic state and hold before her a flat object, usually one with a dull not a reflecting surface, a piece of pasteboard, for instance. She has hardly glanced at this, before she expresses her astonishment that her face is soiled, and she wipes off one line after another, using the pasteboard as a real looking-glass. The pasteboard has to be turned to and fro, in order that all the lines may be detected. Behind her head, yet so that their reflections in the pasteboard can reach her eyes, we place various objects, such as a ring, a watch, a pipe, paper-dolls, coins, lead pencils; she sees them, describes and names them, sometimes slowly however; for instance, when instead of a watch a tencentime piece was rapidly exhibited, she still tried to read the hour: but suddenly she exclaimed: 'The watch is gone! That is two sous.' If we go behind her and show our faces in her pasteboard mirror, she immediately bows, asks a question, or reminds us of a promise. If we throw a kiss at her, she exclaims that we guy her; if we persevere, she grows angry and spits at the mirror. If we raise two fingers behind her forehead, she grows sad and crosses herself repeatedly: she cries that she sees the devil with horns, and exhorts one of her friends to pray with her. The sight of a crucifix makes her glad, and she extends her arms backward to reach it; but if she should happen to touch it she does not feel it. The paper-dolls that are being swung over her head amuse her a great deal and she exclaims: 'What a droll mirror! I see in it alternately the

good God, the devil, and paper-dolls.' One day we exhibit her garter, which has dropped during one of her crises; she immediately recognizes it and asks how that can be in her looking-glass. Several unknown persons pass behind her bed, so that they can be seen in the mirror: she says something to every one: 'This one is young; that one is old; this one has a black beard, this one has a white beard; this one is gay; this one is a mocker.' She sees every gesture, every motion of the lips. One takes a cigar and pretends to smoke. 'Make yourself at home,' she says. About another who crosses himself, she says: 'That one is a good Christian.' If the inscription; 'I am the devil,' is exhibited, she crosses herself in terror. If instead, a slip with the inscription: 'I am the good God' is shown, she grows extremely glad.

"These inscriptions are alternated, and she always shows that she understands them, even if she does not read them aloud. While the pasteboard is lifted and her eyes follow it upward, her breast is bared; when the mirror is again lowered, she discovers it, brushes, and begins to adjust her dress; but it is only necessary to hold her hands to make her forget the commenced movement, and to lift the mirror to bring her out of her temporary confusion.

"Her sense of smell also shows a highly increased acuteness. In order to test this, we bring her again into a somnambulistic state; we take a visiting-card and tear it into small pieces, which are hidden under the carpet of another room, behind furniture, in glasses, flower-pots, in the stove, in our pockets. We then return and give her a piece of the card. She smells of it several times, reflects a little, and rushes out into the other room, runs around, and sniffs and searches like a sleuth-hound for the pieces. Suddenly she stops, sniffs, screams with joy, and picks out a piece of the card. She passes indifferently those persons and objects which hide nothing, but stops obstinately wherever a piece of card is hidden. Protests do not discourage her and she persists until she produces the piece, which she evidently traces by her acute smell. After she has found most of the pieces, she fits them carefully together into a whole, and deciphers the contents of the text. Even with blindfolded eyes she can fit the pieces, together. If then, somebody is made to remove one or more pieces she first becomes impatient and nervous, counts the pieces, and soon attacks the thief like a fury, shrieking, gesticulating and pommeling him, until he gives up what he has taken. If he has gone away, she follows his tracks and finds him. If we try to mix in pieces of another card, she immediately finds the right ones by smelling of them, and throws away the wrong ones. If objects that have been carried by different persons are placed on her bed, she can give each one his own, by smelling of the objects and of the persons. After half an hour's exertion, she does not succeed so well, as she becomes tired, so that her

sense of smell is also weakened. After awaking she remembers nothing of what has passed."

The case just described, thus shows a considerably increased acuteness of both the sense of sight and that of smell during the somnambulistic state. In other somnanbulists, on the contrary, a total *anosmia*, is sometimes found, that is, inability to experience odors, even the most intense. In such a case blowing into the nose is often all that is necessary to restore the sense of smell.

Concerning the sense of sight of the somnambulist it has been found that he can see through the smallest opening between the apparently completely closed eyelids; and Chambard does not consider it impossible that seeing can take place, to some extent at least, through the eyelids, which are often so thin that they let the stronger rays of light through. Cases are mentioned, where color-blindness has been caused in the opposite eye merely by friction on one side of the head, which blindness ceased when the same side of the head was again rubbed.

By careful estimation, the physiologist Beaunis, of Nancy has found increased power of hearing with reference both to the strength of the sound and to the speed [time of reaction] with which the sound is heard.

Tamburini and Sepilli found a sharpening of the sense of hearing during the lethargic stage, and this in so high a degree that the patient jumped at the slightest sound, and at a continuous noise experienced a general tremor, which easily produced a sort of tetanus. The cataleptic stage, on the contrary, caused complete numbness of all the senses, as also of the sensibility to pain. If the eyes were opened during the lethargic state—which produced catalepsy—a tattoo might be beaten close to the patient's ears without his hearing in the least, and his eyes remained staring and fixed; for his sense of sight was now also extinguished. Any kind of motion might be made before his eyes, without causing the eyelids to wink perceptibly. The deepest incisions into the skin were not felt; the strongest vapors (hartshorn, etc.) before the nose, or the most bitter substance (quinine) laid on the tongue was not felt.

The difference showed itself best if one side was made cataleptic, the other lethargic. The latter showed pain at very superficial stabs into the skin, the former was entirely insensible to the deepest cuts. A slight noise before the ear of the lethargic side caused trembling and muscular activity in that side but had no influence the other. If pungent vapors were lead into the nostril of the lethargic side, the head was rapidly drawn away, whereas the same experiment on the other nostril left the patient entirely unaffected. Such was also the case with the sense of taste. If the cataleptic side of the tongue was painted with a solution of quinine, it did not move; if, on the other

hand, the lethargic half of the tongue was painted, the tongue immediately drew backward, the whole face expressed nausea, and foamy saliva accumulated in the mouth.

The influence of hypnotism on the respiration and circulation is rather uncertain and as yet but little investigated. Bernheim's opinion, that all the changes of this kind depend only upon the influence of suggestion, varying mental states and affections, is too one-sided. By careful observation Tamburini and Sepilli have found constant effects of the different hypnotic stages, such as stronger respiratory movements during the lethargic state, weaker during the cataleptic; vascular dilatation during the former, vascular contraction during the latter. In hysterical persons respiration is always quickened at the beginning of the sleep, often in connection with a peculiar noise in the throat, and sleep is always preceded by at least one or two deep inhalations. On transition from the lethargic to the cataleptic state by opening of the eyes, respiration often completely ceases (*apnœa*) for as much as a whole minute, and for a long time afterwards it remains superficial, irregular and labored. The most remarkable phenomena within the circulation—local congestions and hemorrhages—are produced by suggestion, about which more will be said later on.

CHAPTER VII.

PSYCHICAL EFFECTS OF HYPNOTISM.

THE influence of hypnotism upon mental life—its psychical effects—is rich and varied, and of so pecular a nature (often opposed to ordinary mental life and sometimes even bordering on the incomprehensible and marvelous) that these phenomena, which at all times chiefly interested the public at large, and of late have also attracted the serious attention and study of the scientists, well deserve a more extensive consideration in this work.

As for the influence of hypnotism on the special senses, we have already seen how perception of external impressions is greatly modified, although in different ways during different hypnotic stages, so that the senses are sometimes benumbed, sometimes extremely sharpened. On this a number of the psychical phenomena of hypnosis depend. Here we would only recall to memory, that during lethargy all the senses are benumbed, except sometimes hearing; that during catalepsy, one sense or another wakes, but that especially the muscular sense is very impressionable; and finally that during somnambulism the senses are not only awake, but generally highly acute. This also applies to the other mental faculties during the somnambulistic state,

and hence somnambulism offers the greatest variety of marvelous phenomena within mental life, and hence is best adapted to psychological experiment.

Among the sharpened mental faculties *memory* takes the first place; indeed it can be said that it is principally the memory that masters the whole scene of the somnambulic drama. Under different circumstances the memory proves exceedingly good or particularly dull. It is a very characteristic and constant fact that the deeply-hypnotized, upon waking, remember nothing of all that has taken place during the sleep, whereas, if again put to sleep, they then very clearly remember what they have thought or experienced during previous hypnoses. It seems as if there were two separate forms of life, the normal, wakeful life and the somnambulistic life, each with its experience, its memory; that the two spheres are rather independent of each other; that the personality is doubled, as it were. These spheres are not entirely without connection, for it is a second characteristic quality of the somnambulistic memory, that it holds not only remembrances from previous somnambulic states, but also from the wakeful state, and these much more lively than the normal. As long-forgotten things can return during natural sleep in dreams, so the memory during hypnosis can show an incredible acuteness as to past events and impressions received long ago, which otherwise in the wakeful state cannot be brought to consciousness even with the greatest effort. By this acuteness of the memory, the ability of the somnambulist to recite poetry can be explained, as also the fact that he can express himself in foreign languages, of which he formerly had only a slight knowledge.

There is however a means, but only one, of restoring to memory in the wakeful state that which has passed during the hypnosis, viz.: suggestion. If you assure a hypnotized person during his sleep, that upon waking he will remember all that he has heard, said or done in his sleep, he will then remember it upon awaking; otherwise he will not. It is essentially necessary that the hand of an outsider put this mechanism of memory into motion; the subject himself cannot do it! But that is not all; by suggestion you may in the same way so thoroughly obliterate memory, with reference to both the wakeful and the hypnotic states, so that it even does not return as usual in later hypnoses. This has a great practical significance, especially from a juridical point of view, to which we shall later return.

Some instances published by Beaunis might best illustrate the above-mentioned qualities of the memory.

Miss E., who felt a repugnance towards certain articles of food and who was ordered by Beaunis to observe a certain dietary, could seldom minutely give an account of what she had eaten a couple of days before, if she was questioned about it when awake. By putting her to sleep, on the contrary, B, received the most minute and

complete accounts of the meals, including even such trifles as otherwise do not generally attract one's attention.

Hypnotized at the physiological laboratory in Nancy, the same person was informed by suggestion, that upon awaking she should see Mr. X., (who was then present) with a nose of silver ten inches long. We need not add that he had his own natural nose. When she, upon awaking, beheld Mr. X., she immediately began to laugh aloud.—"What is the matter?"—"Of course you see that nose!"—"It is a hallucination that I have imparted to you: it is not true."—"But I see the nose clearly, though."—"Well, I will take that fancy from you."—Beaunis now assured her that the silver nose was gone.—"Oh look! Mr. X. has no longer any silver nose:—he has an ordinary nose!"—"Of course!"—"Well, do you now remember that you just saw Mr. X., with a silver nose?"—"No! his nose has always been as I now see it." Thus she had no memory of the hallucination produced by suggestion.

The case is the same with actions. Madam A., is hypnotized by staring. While asleep, she is made to believe that three minutes after awaking, she will go and embrace a little peasant woman, who is sitting in the corner of the room and whom she then sees for the first time. At the moment predicted, she goes and embraces the woman, who is quite astonished at this unexpected caress. When a moment afterward she was asked "What did you do?"—she answered "I? Nothing!" "Yes, you embraced that woman."—"No! certainly not." —She had already forgotten what she had done.

From this it may be seen, that such actions as are afterwards acted out during the wakeful state on account of suggestion under hypnosis, yet are not done with fully awakened consciousness, but probably in a somnambulistic state—produced for the occasion—which lasts only during the time of the action. Still more complicated actions of the same kind are usually forgotten.

But yet again: Suggestions can be produced even in an entirely wakeful state, and these can also be effaced from memory. During a conversation with Miss E., when she was fully awake and had not been hypnotized once during that day, B. quite unexpectedly closed her hand saying: "You can no more open your hand!" She tried in vain and said "Please open my hand, for otherwise I cannot work!"—After a while B. said: "Now you can open your hand yourself!"—She opened it without difficulty. A few minutes later, B. asked: "Of course you remember, that a moment ago you could not open your hand?" "No; I have always been able to open it."

In a like manner, B. could make the same lady believe, in a wakeful state, that a friend's hat, which she saw before her, was white although it was really garnet-colored: and though she then first contradicted B., when he declared it garnet-colored, she immediately forgot that she had seen it white.

On another occasion she was compelled by suggestion to twirl her hands around each other. During this proceeding, she acknowledged that she was fully awake; that she well knew what she was doing, but that she could not stop the movement; she also promised to remember what she was doing, but nevertheless she remembered nothing after B. had stopped her hands. So, too, suggested actions of greater complexity can be forgotton.

Miss E., had just entered when B. said to her: "In one minute you will go and change the two statuettes, (Thiers and Béranger), on that *étagère*." At the appointed time she did it, but did not remember it. Mrs. A., who was of the company, was sure that anything so silly would certainly never happen to her. "Very well!" said B., "in one minute, madam, you will steal one sou out of my coat-pocket and put it in your own." One minute later, with some hesitation, the lady rose, furtively slipped her hand into B's pocket, took out a sou and put it quite unconcernedly into her own. A moment afterwards B., said: "Empty your pocket!" She looked at him quite astonished, emptied the contents of her pocket into her lap, found among other things one sou, looked at it for a moment and put the coin into her pocket-book. One of the assistants then said: "That coin was not yours, you have just taken it from Mr. B." She remembered nothing and lives in the belief that it was her coin.

Not always however does the memory in these cases disappear so quickly; sometimes it lasts for some minutes, but finally disappears entirely. The strangest thing is, that the suggestions, performed during wakefulness and soon forgotten, again return to memory during the next hypnosis. This gives further support to the opinion that the action was performed in a somnambulistic though apparently wakeful state.

Through suggestion persons can also be made to have certain dreams during the natural sleep. Furthermore, memory can be partly extinguished; for instance, a person can be made to forget all the vowels, all the consonants; this vowel or consonant or that one; nouns, adjectives, pronouns, even his own name, special periods of his life etc. In one word, it would seem to be as easy to benumb by suggestion a certain group of brain-cells, as it is to paralyze a muscle.

Finally, we will call attention to the *latent, unconscious memory*, which manifests itself by the fact that an action ordered by suggestion for a certain time is performed punctually at the prescribed moment, though months and even years may have elapsed, and although the person has not thought of the matter during the intervening time, nor had it in conscious memory. There seems to be hardly any limit to this latent memory. Beaunis quotes one case, where the action was performed after 172 days; others tell of still greater differences in the time between the suggestion and the execution. When the action is

then performed, it is not on account of a conscious remembering that it should be done, but through an unconscious and irresistible impulse, without the motives being clear to consciousness. This is something very peculiar, and has no analogy within the normal functions of memory. Under ordinary circumstances it happens, though, that something that has been forgotten—a name, a date, etc.—and which you in vain try to find in the dim corridors of memory, will return of itself on a later occasion, usually however, brought forth by some chance occurrence that causes an association of ideas in that direction. But time and moment are not decided for such a resurrection of memory. The cast is very different with the somnambulistic memory, where the impulse of performing the previously suggested action always occurs at the hour given, and of itself, without being caused by any external occurrence or association. For instance, I tell the hypnotized person that on the tenth day after this at five P. M., he will open a certain book and read page 25. Although the idea of opening the prescribed page of the book unconsciously lingers in his brain, and is so strong that it absolutely compels him to do it when the fixed hour has arrived, he can not even be reminded of this idea *before* the appointed hour, even if the said page of the book is shown to him. Only when the right hour has come, are the memory of the action and the impulse to it awakened. Thus we see that here we have no common association. This phenomenon has been proved so often that it can not be doubted, although it is difficult to explain. An analogy may be found in the ability possessed by many to awake from ordinary sleep at a determined hour, when they have thoroughly made up their minds to it. Still more common is the previously determined punctual waking from hypnotic sleep. Before or during the hypnosis, you say to the subject: "You will awake in five, ten, fifteen minutes;" or, "You will sleep so many hours;" and it never fails that waking takes place punctually at the prescribed time.

The intellectual ability of the hypnotized is more difficult to estimate than is the acuteness of the senses and memory. It can generally be said, however, that the intellect [power of judgment] keeps pace with the sensibility and memory. In lethargy, which corresponds to deep, natural sleep without dreams, the intellect also sleeps. Only the hearing is enough awake to be able to accept some simple suggestions, some hallucinations. It is first during catalepsy and still more during somnambulism, that mental life awakes; that the hypnotic dream begins and develops to great vividness. Characteristic of catalepsy is the *automatism*, the involuntary, passive, machine-like, mental activity. Through suggestion the cataleptic can be forced to psychical activity, but the latter is entirely dependent upon the external impulses, and is not regulated by any internal motives; the cata-

leptic individual is an inert tool in the hand of the hypnotizer; he makes no resistance and takes no initiative of his own; he is a doll, a marionette, whose actions are entirely dependent upon the cords that are pulled; he is no personality; there is *no cataleptic ego.* He is like one asleep who is completely a slave of his dreams.

Such is not the case with the somnambulist. He is much more independent; he is a personality, with a certain character, with distinct sympathies and antipathies; certainly in a great measure susceptible to suggestion, but at the same time possessing a certain power of criticism, of resistance, of freedom. As for the mental faculties of the somnambulist, they are by no means different in quality from those of the normal, wakeful state, though they are of different acuteness; they often prove highly sharpened in all directions: the senses more acute, the sensibility quickened, the judgment more rapid, the fantasy livelier; all the strings of the soul are tuned higher; their condition might be best compared to a slight maniacal exaltation. But the somnambulist is not such a passive automaton as is the cataleptic; he certainly is easily impressed by suggestion, if that does not touch his personality: but if this is concerned, he can say nay, offer resistance, show judgment of his own and a certain freedom of action. The somnambulist shows especially a certain independence with reference to other persons' influence over him, so that he, for instance, blindly obeys those who awaken his sympathy, but opposes all others. This kind of independence, however, is often seeming rather than real. For the sympathy mentioned can be produced in a very artificial manner. The person who has caused the somnambulism by some direct personal contact—such as pressure on the head with the naked hand, "passes" etc.—always becomes the chosen one, to whom the somnambulist renders blind obedience. This is plainly shown by the following experiment. Instead of using the hand, the top of the head is pressed by a wooden spoon, a roll of paper, or any inanimate object. The somnambulist then remains indifferent; any one can now exert influence over him: produce contractures; again relax them; waken him etc.; whereas, if he were hypnotized by direct personal contact, no one except the one who touched him has any further influence on him. But besides this rather artificial sympathy, there is also, as in normal life, a natural sympathy, a certain "*rapport*," which makes the somnambulist more easily influenced by one person than by another.

Before proceeding with the consideration of the somnambulic psychical phenomena, we will more closely investigate the method which is used to produce and guide these phenomena, and which can be comprised in the modern name—*suggestion.*

CHAPTER VIII.

SUGGESTION.

SUGGESTION, from the Latin *suggerere*, to lay under, to inform, would perhaps in our language be best rendered as "inspiration" or "imagination;" but, as these words are used only in the sense of spontaneous internal inspiration—imagination—spontaneous suggestion, whereas suggestion generally signifies an inspiration from without or an internally imparted sensation, thought, impulse, etc.—for which meaning the modern expression "transmission of thought" is not fully exhaustive either,—we prefer to use the term suggestion, which originated in France, and is generally used both in that and in other civilized countries.

It is not easy to give a definition of the word suggestion, which persons begin to use with a more and more extensive meaning. It might be said, that by this word is meant *every operation, which in a living being causes some involuntary effect, the impulse to which passes through the intellect*, producing some imagination or idea, or simply: control over a person by means of an idea. A concrete example will more easily explain this abstract definition, which, for the reader, may be somewhat hard to digest. On one hypnotized a contracture is produced in the muscle that bends the arm by squeezing the muscle, or without touching it, by merely saying: "Your arm is bent; you cannot straighten it!" In the former case the procedure is purely physical: the excitation to muscular contraction is a reflex-action, so-called, which runs over from the sensory nerves of the muscle to its motory nerves, without passing through the intelligent sphere of the brain; in the latter case the excitation goes through the organ of hearing to this sphere, where it produces an idea or illusion that the muscle is going to contract; this imagination produces in the muscle's motor centre in the brain an impulse, which is communicated to the muscle through its motor. We see that this way of suggestion to the muscle is far longer, and that it passes more stations than does the simple reflex-action. All suggestion is thus mediated through an "ideation" or action of ideas or illusions. The great susceptibility of the organism to influence from such ideations explains the important role that is played by imagination, in the causing and curing of certain diseases.

But the roads to the brain centre of ideas and imaginations are many, and hence there are also many kinds of suggestion. The simplest, shortest, most convenient and consequently most common way is that of the spoken word. It goes directly through the ear to the brain. The somnambulist is told that something is thus or so; that he is seeing, hearing or feeling this or that; that he will do this or

that; and then his ideas concentrate exclusively on this. This suggestion by words is called *verbal suggestion.* But the word can also be written. The only difference then is that the suggestion enters through the eye instead of through the ear. Also the other senses, smell, taste and especially touch, are easy routes for suggestion.

It is worth while to give special attention to the suggestion through the sense of touch, which in a measure arises within the organism of the somnambulist himself through the muscular sensibility; the last named interprets the different attitudes, of the body (if these are in any way characteristic) as expressing some special mood, affection or passion in the brain, and produces certain corresponding ideas, moods and motions. This form of suggestion is by the French called "*suggestion par attitude.*" For instance, if you place some one in the attitude of prayer, without mentioning by a single word that he is going to pray, the mere position awakens in his brain the idea of prayer, and not only his position but also his facial expression then shows that he is exclusively thinking of prayer. If he is placed in a tragic attitude, his face assumes a tragical expression; if his fist is clinched, his eyebrows contract and anger is reflected on his face. . If he is made to commence a movement with some distinct aim, he continues the movement himself. If he is placed on all fours, his locomotion is that of a quadruped. If a pen is placed in his hand, he will write; if some fancy-work with needle and thread is placed in the hands of a woman, she begins to sew. The positions in which the hypnotized are placed easily create corresponding ideas in the degree that they are expressive and common. There are instances of such suggestions by positions even in completely healthy, wide-awake persons with strong imaginations. Bennett tells of a butcher, who, when he was about to hang a piece of meat, caught his own arm on the hook and remained hanging until he was taken down half dead with pain and fright. Although he complained of pain in his arm, which he supposed to be pierced by the hook, the arm was found entirely uninjured, and the hook had only caught in his clothes.

This suggestion through attitudes impressed from without and sensations experienced within, borders on the suggestion which comes entirely from within, and which is consequently called *auto-suggestion* or self-suggestion. As instances of this, cases like the following have been quoted.

During hypnosis a woman was made to believe that she was wrestling with her physician, and that she had given him a strong blow in the face. The day after, when her imagined adversary entered the room, she claimed that she saw a large black and blue spot on his face, although there was no trace of it. This hallucination had arisen in her through self-suggestion. No one from without had created this idea in her. It was caused in her own brain by her previous idea of

the wrestling. She thought: "I gave him yesterday a sound blow on his face; consequently, he must to-day have some mark from it."

Another woman, who was one morning put into a deep lethargic sleep, but only for five minutes, imagined upon wakening that she had slept for many hours. The physician let her remain in this belief, and told her that it was 2. P. M., although it was but 9. A. M. At this information the patient immediately experienced sharp hunger and asked to have some dinner. This imaginary hunger was satisfied by a meal, equally imaginary. Through suggestion the hallucination was produced in her that a plate with victuals was standing on the table and that she was partaking of a meal. She became satisfied and spoke no more of hunger.

Concerning these cases of self-suggestion, so-called, it might however be remarked, that although the later ideas have arisen in the brain of the patients themselves, yet they are really but a continuation, a logical sequel of the ideas that had previously arisen through impulse from without.

Such an independent and yet irresistible completion of an idea, so that it even changes into feeling, desire, and action, is generally found in the somnambulists, yet with far more lack of freedom than in the wakeful.

Beaunis quotes several striking instances of this.

After he had hypnotized Miss E., he said: "When you awake, you will say to Mrs. A.: "I should like very much to have a few cherries!" Awhile after awaking, she went to her friend, Mrs. A., and whispered something to her. B. then said: "I know what you whispered; that you longed for cherries."—"How do you know that?" she said quite astonished. On the following day she bought some cherries to satisfy her violent longing for them. Mark well, that B. had merely suggested the words, but through the words she had spoken, the desire had arisen: all of which shows the close connection between words, ideas, and sensation. The expression of the desire blends with the desire itself. Yet it is not so in a waking person. If I repeat ever so many times the words: "I desire cherries," then, unless I already had the desire for them, I certainly do not conceive it by merely repeating these words. Nor am I compelled to write because I take a pen in my hand. This shows, that in the hypnotized the associations of ideas are more automatic, more dependent upon external circumstances, whereas, in the wakeful state they are controlled. regulated, checked when necessary, and generally guided by a conscious free will.

Before we proceed, we will somewhat discuss the question of susceptibility to suggestion. Who are more or less susceptible

First we would remark that susceptibility manifests itself not

only during hypnotic, but also during natural sleep; yea, even during the completely wakeful state.

Many who are used to receiving suggestions during hypnosis, also prove susceptible to such suggestions during the completely wakeful state, without any need of their first being put to sleep. The influence which the hypnotizer acquires over his subjects during hypnosis, often continues to a certain extent, when they live their usual life. But many persons are also found, who have never been thus prepared by hypnotism and who yet prove highly susceptible to suggestion and this even without proving particularly susceptible to hypnotism. This is especially the case with all imaginative persons. Only by seeing or hearing of a disease, they can imagine that they suffer from the same complaint. Especially within the nervous system many ailments are to be found—such as spasm, contracture, paralysis, neuralgia, anæsthesis, etc.—which arise in this way. It is easy by mere assurance to transfer such a disease from one part of the body to another. Before the biological society of Paris, Botty has exhibited healthy and wakeful persons, who, by merely an energetic assurance, or by some anointing, could be rapidly made mute, blind, deaf, insensible to odors, or striken with palsy, contracture, or anæsthesis. It is obvious that such diseases are just as easily cured by suggesion or by a confidence-inspiring assurance that they are cured. This explains how such thaumaturgists as Boltzius possibly succeed in a few cases belonging to this category.

Nothing is more common than for those who study medical books —and even young medical students—to feel distinct symptoms of the diseases of which they are reading at the time. Bremaud tells of a young student, on whom he could at pleasure produce contracture, anæsthesis, etc. The student, who was in good health, could not understand why he could not move his limbs when B. forbade him to do so, and why B. could stick needles through his skin without his experiencing any pain. Another student, who was inthis manner fastened to a chair or pinned to the floor, became quite angry over the awkardness of his situation.

As a proof of how one suggestion neutralizes another, B. gave to each of the students mentioned a box well wrapped up, with a statement that the box contained something that would make them insusceptible to every suggestion. As long as they held the box in their hands, it was impossible to renew the experiment just mentioned. But great was their astonishment when they afterward opened the boxes and found that they contained—nothing.

In the same way, wide-awake persons can be made to jump, dance, assume the most comical postures, or to become insensible. Without previously hypnotizing the patient, Bernheim succeeded in causing such insensibility that the roots of five teeth could be pulled out with

out the slighest pain. Probably, however, there is a certain nervous weakness in individuals so susceptible to suggestion, although they are apparently healthy. Yet this is more easily done with those who are used to being hypnotized, and although seemingly awake, they must be considered as being put by the suggestion into a less perceptible (latent) hypnotic state.

Since remote times, such imperceptible states of hypnotism have been known under the names of *enchantment* and *fascination.* The snake-charmers of India have practised this form of suggestion for thousands of years.

In modern times, the attention of the scientists was called to this strange phenomenon—suggestion of the wakeful—about 1848, by one Grimes from New England, who in wakeful persons produced the same nervous phenomena as his contemperaries, Braid and his pupils, caused in the hypnotized. The method, which was called by Grimes *Electro-Biology*, was introduced into England in 1850 by Dr. Darling, and awakened great interest in the mind of the physiologist, Carpenter. In his "Mental Physiology" C. devotes a whole chapter to this *biological state* or "induced dream." Those "biologized" are considered as awake. These suggestions in the wakeful have been throughly studied by Bernheim, Liègeois, Beaunis and others. According to Liègeois such a person does not show the slightest sign of sleep; his eyes are open; his movements easy, he speaks, walks, acts as everybody else; he joins in the conversation, answers objections; he discusses with successful hits; he seems to be in a fully normal state, except in the one respect, where he is checked by the person who experiments with him.

A similar state, though somewhat more akin to somnambulism, Liègeois describes under the name of "*charme.*"

Beaunis points out, that those "suggested" in the waking state may be mistaken for persons slightly hypnotized with open eyes. I myself have seen such a condition in a spiritual medium, who sometimes entered into a somnambulic state—by the spiritualists called "trance" —when with open eyes he fell into a kind of ecstasy with hallucinations, sharpened mental faculties etc.

In one word, there are a number of different stages between the completely wakeful state and the deep somnambulic sleep; and it is often exceedingly difficult to decide whether a person who proves susceptible to suggestion is fully awake, or in a slight, latent, somnambulic state. I am inclined to think that a latent somnambulism is present much oftener than is supposed, especially if the meaning of somnambulism be extended so far as to embrace all conditions—excepting natural sleep and all pathological forms of insensibility depending upon distinct diseases, poisoning, etc—where consciousness, judgment and free will do not possess their ordinary acuteness and distinctness.

According to this opinion all who prove susceptible to suggestion would at the time be more or less somnambulistic; but if they really are fully awake, and yet allow themselves to be imposed upon by suggestion, they may at least be considered as "poor sticks."

Yet there are conditions, under which strong minds also can be ensnared by a suggestion, viz.:—when they are taken by surprise during a state of absent-mindedness, onesided thinking in another direction, lack of attention, temporary want of will, or too much confidence in the one who produces the suggestion: but all these conditions are such as make a person at least *less wakeful*, if not sleeping.

In a limited sense, suggestion plays a far greater role in normal human life, and appears daily far more often, then we think. Broadly speaking, suggestion generally constitutes an important part of all education of children, of all teaching; of the physician's treatment of the sick; of the influence of all men over each other, for good or for evil. For instance it is a common experience that "confidence" in the physician and in the remedy in many diseases greatly promotes the success of the treatment. What is this but suggestion? The physician or the remedy awakens in the brain of the sick person the idea, that just this physician or this remedy will cure his disease. This suggestion is often more than half the cure.

The like action of suggestion is to be seen, in every day life. If you suddenly say to a young, bashful girl: "How you are blushing!" her face usually grows red, although she did not have the slightest cause. By yawning or by pretending to yawn I can cause a whole company to yawn. Laughter and tears are also directly contagious: my mouth waters when I hear a delicacy spoken of: all is suggestion, when it is a direct, not fully voluntary, reflex action that passes through the brain.

As, in a somnambulist, by a fictitious story, I can produce the liveliest mental affections, so a wide-awake person may be moved to tears, to laughter, to expressions of joy, sorrow, anger, etc., by a drama or by the reading of a novel. The difference between the suggestions in the two cases is not great. The reasoning thought, that the sorrow is fiction, not reality, immediately stops the tears, which were produced by merely a reflex action.

This common human susceptibility to suggestion has its degrees however; it is least developed in powerful thinkers—cold, practical men of sense—and most prominent in weak, sensitive, powerless, dependent natures, and generally most in women, children and old men.

Also during natural sleep, man is susceptible to suggestion. But it would lead us too far to show how dreams can be produced and guided at pleasure by this means.

We have shown above, how suggestion can be conveyed in different ways and by different methods. One kind of suggestion, which arises in the hypnotized by imitation, is especially described by Berger. The subjects of this sort of suggestion are by him called *echolali*, because they imitate precisely like an echo, inasmuch as they not only repeat every word spoken by the hypnotizer, but they also imitate every gesture, every motion; and finally if they only hear a word, an intimation, they execute movements that are connected with this idea. The mere mentioning of the words, weeping, laughter singing, running, dancing, causes them to perform these several acts.

Suggestion has a vast field for its effects; it can be said to be as extensive as the nervous system in general, inasmuch as all forms of nervous activity can be induced by suggestion. Thus the effects manifest themselves within the motor sphere by producing or inhibiting motions, and by producing all kinds of positions, and also changes in the condition of the muscles, such as contraction, contracture, tetanus, paralysis, etc., as well as within the sensitive or sensory sphere by causing or alleviating pain, sensitiveness or insensibility and by producing all possible changes in the senses; their sharpening or benumbing. Still more important and varied are the effects of suggestion within the higher psychical life, where thoughts, ideas, moods, desires, impulses and actions can all be ruled by it. This influence lasts not only for the moment and during the sleep, but by affecting the memory it also lasts far into the wakeful state through *post hypnotic suggestion*, so-called.—Finally there is a sphere for suggestion, where the normal influence of the nervous system, though quite perceptible, is as yet not fully explained by physiology, viz.:—the functions of the vegetative life, such as circulation, heat-production, digestion, excretion, etc. On this ground it seems that the influence of the nervous system can be increased, often to an incredible degree, by suggestion, which has aided many a performer of wonders to produce so-called supernatural effects in this direction.

Thus, with reference to their effects, suggestions might be classified as motor, sensitive, sensorial, hallucinatory, psychical, vegetative, etc.

From another point of view, they may also be divided into *positive* and *negative;* the first-named, when a positive result is caused —an active effect, such as a motion, an action, a pain, an hallucination, a spoken or otherwise expressed thought; the last-named, when they have a negative, inhibitive effect; for instance, when insensibitity, palsy, blindness, deafness, dumbness, etc. are produced.

We have shown in general, how suggestion by impression is imparted, and how it manifests itself by different expressions. But what is it that mediates impressions and expressions? As we have seen, suggestion—unlike the simple reflex action, which only passes

through the spinal chord—must pass through the centre of ideas in the brain; the mediation thus takes place through an association of ideas.

An instance best explains the machinery of suggestion.

The hypotized person is told: "Look! there is a bird on your table." As soon as the words are spoken, he sees the bird and feels it with his fingers; he can even hear it sing. Thus, the mere word creates an hallucination, produced by the fact that the word, bird, and the image of the bird are always connected with each other by an association of ideas. The same optical illusion can be brought on by other means; for instance, by describing a bird's flight through the air by means of the hand. Here it is the similarity between the movements of the hand and those of the bird that form the bridge of association. Some Scotch psychologists—Th. Brown, for instance—have called attention to the fact that the association is also really dependent on suggestion: one image, one idea suggests another; thus the law of suggestion is a physiological basis for normal thinking. When an image arises in the brain, it always strives to arouse similar images, such as are through nature and habit most easily connected with the first one. Hence we find that this form of hypnotic suggestion, wonderful as it is at first may seem, and foreign to normal mental life, yet is nothing but a somewhat more complicated application of one of the most important fundamental laws of mind. This corroborates the general rule: *in natura non datur saltus*, that is:—there is no leap in nature; from the normal functions of life you usually find changes into the abnormal, so slight and so slowly-appearing, that they, as subject to the same laws, cannot be plainly distinguished from each other.

However, all forms of suggestion are not equally easy to explain. For both the negative suggestions and those which are put into action directly or a long time afterwards, offer great difficulties. Now appears another influence of a higher, less mechanical kind, than when one image is produced by another, viz.: the impulse from a will that makes action voluntary, as opposed to reflex action. In those who act on account of suggestion, this impulse comes from without, from the will of the hypnotizer; in the wakeful person, who acts voluntarily, it comes from the will of the latter himself: this is the only difference. Besides, it is just as difficult in one case as in the other, to understand the connection between the mental impulse and the physical action. Here we stop before a dualism, where science is still searching in vain for the connecting link. That functions are suppressed by negative suggestion, must depend on the imparted fixed idea or belief, that the functions are impossible; which idea totally checks both the impulse to motion in paralysis and the sense of feeling in anæsthesis.

After this general explanation, it will become easier to comprehend—in some degree at least—the complex effects of suggestion. It is not easy to make a choice from the variety of instances offered by the literature, even if we adhere to only the most modern. For better order, we divide them into new main groups.

Hallucinations or illusions. By hallucination is meant—as we all know—a perception through one of our senses without corresponding reality; as when the eye perceives an image on a blank sheet of paper, or when the ear hears a voice though everything is still. On the other hand, we call it delusion, when the senses conceive a real object in a wrong way, as when the eye takes the picture of a man to be that of a horse; or when the ear mistakes the stroke of a bell for a human voice. Both kinds are included in the name illusions. These constantly appear in our dreams and during various mental diseases. In the hypnotized they are easily produced by suggestion.

These suggested illusions can affect all the senses, and can be varied *ad infinitum* according to the will of the hypnotizer. By deception of sight the room may be changed into a street, a garden, a cemetery, a lake; present persons may be made to change appearance; strangers to appear, objects to change form and color. On a blank sheet of paper all possible figures can be made to appear to the imagination; the hypnotized can even be made to cast up long accounts with the numbers that they imagine they see on the paper.

To the *hearing*, the voices of unknown persons can be made to sound like those of friends; under complete silence sounds of birds and various animals can be produced, as can also voices, that speak gently or loudly, that praise, insult or scold.

The *sense of taste* can be so deceived that raw potatoes taste like the most delicious peaches; that the sweet tastes sour, the sour sweet; even vomiting may be caused by merely declaring a draught of water, after it is in the stomach, to be an emetic.

The *sense of smell* can be made to find the strongest odor in objects that have no smell at all, or to find the fragrance of roses in assafœtida, or abominable odors in a fragrant rose.

The *sense of touch* can be deceived and cheated in various ways. In the part of the body that is declared insensible, incisions can be made with sharp needles, burning irons or keen-edged knives, without being noticed. The pain from an imaginary wound also arouses other hallucinations:—blood seems to run and the wound is carefully bandaged.

Snggsstion can affect the *muscular sense*,—so that objects seem heavy or the reverse—as also the *organic sense or cœnæsthesis*, by which all kinds of natural desires (hunger, thirst, etc.) can be aroused or appeased. This organic sense can be so completely deceived, that the hypnotized individual believes himself to be an entirely different person.

An amusing instance of this kind is told by Binet and Féré: One day they said to the hypnotized Miss X., that she was Dr. F. After some slight opposition she agreed to it. Upon waking, she did not see Dr. F. who stood before her; but she imitated his walk, his gestures, his speech; from time to time she put her fingers to her lips and made a motion, as if she twisted a moustache, as the doctor was in the habit of doing, and she assumed a pompous mien and posture. At the question: "Do you know Miss X.?" she hesitated a moment, then shrugged her shoulders in contempt and said: "Oh! yes, she is an hysterical woman."—"Well! how do you like her?"—"Oh! she is a fool."

Most of the hallucinations produced in this way, do not stop at this simple state, but awaken secondary series of ideas or manias, which further develop and disclose the consequences of the hallucinations, exactly as in the mentally deranged.

As there are one-sided (unilateral) illusions in the insane, so that, for instance, they see a vision with only one eye, hear a sound with only one ear, so unilateral hallucinations can also be produced by suggestion. For instance, the one hypnotized is made to believe, that on a blank paper he perceives a picture with his right eye only. If his right eye is closed and the left one is open, he then does not see the picture: and the same can be reversed. Upon waking, the illusory picture remains, but only to the right eye. To the left the paper appears entirely blank. This interesting experiment can be made still more complicated. Corresponding senses may receive dissimilar and opposite hallucinations. For instance, you say to the right ear: the weather is pleasant, the sun shines brightly; and to the other ear: it is raining and it is unpleasant weather. The right half of the face then smiles while the left looks sullen. To the right ear, a rustic festival with merry young persons is discribed, but the left one is told that an angry dog is barking. The same difference as before in the two halves of the face. The hypnotized person can be made to believe that every thing looks red to his right eye. A piece of white paper will then appear red to the right eye, white to the left eye, and pink to both eyes If one eye is made to see red and the other green or blue, a compound color will not appear to both eyes, but alternately red, green or blue.

We now arrive at some still more wonderful phenomena of hallucination which the science of the present day has not been able to explain. Although an optical illusion seem to be fixed only in the brain of the one who sees it, and lacks all reality, all fixation, yet it seems as if the hallucinator possessed a certain power of giving the image some kind of physical fixation in reality. The following facts, properly vouched for by scientists, yet incomprehensible, testify to this. We return to the example with the imagined portrait on a blank sheet of paper. Take a clean piece of white paper, which is alike on both sides, and so

free from all marks that the underside cannot be distinquished from the upper. Put it before the hypnotized person and make him believe that he sees a portrait drawn on the paper. Turn the paper, and he will not see any picture on the other side, unless he is made to believe that he also sees an image there—which should not be done in this experiment. Always remember which side was first turned up, and however deceptive the turning of the paper may be, it will y et be found that he never mistakes the two sides, nor ever sees the picture on the wrong side, nor ever fails to see it on the right one. Nor does he mistake the position of the picture; if the paper is turned upside down, he sees the picture standing on its head; if it is turned side-ways, the picture is lying horizontally. It is evident that all changes of the position of the paper are done so that he cannot in any ordinary way notice it, either behind his back, or while his eyes are blindfolded. He always places the picture according to the first suggestion.

Another experiment made by Féré is not less wonderful.

On a piece of white paper, he placed a white visiting-card, whose outlines he followed with a blunt pen, in the air, close to the paper, without leaving any trace of the lines, but he made the hypnotized individual believe that he drew black lines on the paper. After the patient had been wakened, he was asked to fold the paper where the fictitious lines were. He held it at the same distance from his eyes as it had been during the hypnosis, and folded it in a rectangle minutely corresponding to the card, which now he was not allowed to see.

A similar experiment has been performed many times by Charcot before a number of pupils. On a blank white cardboard, he produces by suggestion to the hypnotized person the image of a portrait. Then he mixes this piece among a dozen blank cardboards of the same kind and appearance. He wakens the sleeper, and without saying anything about the portrait, he asks her to look through the blank cards; upon doing so she finds, to her astonishment, one that has a portrait, and she gives the same description of it as during the hypnosis.

In the present status of the science, this wonderful power of seeing can hardly be explained in any other way, than that the image on the paper must be connected by some association of ideas with some mark on the paper, some spot, uneveness, etc., which causes the right side and its correct original position to be always recognized, although the marks are so diminutive that they cannot be traced by ordinary eyes. But at the same time it must be stated that this explanation is not satisfactory; for it is only the experimentalist, who thinks of such a mark and has occasion to make it. The hypnotized person has no reason for such a precaution, when he only stares at the image and by no means dreams of the experiments to follow.

If a spiritualist were asked to explain this mystic phenomenon, he would immediately have on hand an answer that would solve the

enigma: his doctrine of "materialization"—if it were only true. For he claims in the human spirit, as in the absolute Spirit of the universe, a certain creative power, and he does not consider it impossible, that the optical illusion of man, when projected from the eye to the paper, deposits there a fine ethereal substance, which, imperceptible to ordinary eyes, is yet easily detected by sight sharpened by hypnotism. The spiritualist would even believe in the possibility of transmitting this image to a sensitive photographic plate, which would of course be the best proof of its physical reality. It must be reserved for future science to solve this enigma; the science of to-day can only acknowledge its want of power in this respect.

However, we cannot leave the question of hallucinations without glancing at the very important experiments which have been made in the *optics of hallucination* so-called, or the relation of optical illusions to the ordinary laws of optics. One would naturally believe that the hallucinations are so immaterial, so connected with the sphere of the imagination in the central parts of the brain, so wanting in reality, that the realistic laws just mentioned would not in the least have any application to them. Until now, optical illusion has always been explained as if it were an internal image in the brain, which arises either in the central visual centre in the cortical substance of the brain, or at least is not found further away than on the retina of the eye, and as if the apparent external image were only constructed by an act of thinking in the brain—a perception, an imagination—which, when it is accustomed to receive all sight-impressions from the external world, upon judging about the place of the image, projects the hallucination-image outward, as it does every image from the real external world. In both cases, the projecting is a mere action of thinking, which, as such, cannot cast any rays into the world from the internal image in the brain. Thus the real image and the illusory one are alike in this respect; but the difference is, that the real external image throws real rays into the eye, whereas no such rays are thrown into the illusory internal image in the brain. Then, as the illusory image has no real rays of light, either entering or emerging, it seems as if this image would be entirely independent of the laws of real reflection and refraction. But that is not the case; and here we meet new and wonderful phenomena, which are very difficult to explain.

We know, that in seeing with both eyes at the same time, every object would appear double, unless the eyes were always placed, so that the visual rays converge and meet on the object. If, on the other hand, the eyes are directed so that the visual rays, or the prolonged axes of the eyes cross each other before or behind the object, then two images arise; the person sees double, as in strabismus, or when the rays that go to one eye are refracted through a prism. Hence, if an object is steadily looked at with both eyes so that it appears single, two

images arise if one eye is pushed inward so that an artificial strabismus is produced; if the finger yields, the object again appears single. Brewster tried this simple experiment on a person who suffered from visual hallucinations, and to his great astonishment, he found that in this way he doubled the imaginary picture, the imaginary object. This observation has been corroborated by several physicians. Ball, of Paris, had in his clinic a hysterical woman, who, during an ecstatic crisis, saw the holy virgin in a luminous dress; if one of her eyelids was pressed obliquely she saw two such madonnas. Instead of pressure by the finger, Féré has used a prismatic glass before one eye to double the visual hallucination; and he has calculated that the distance between the images has exactly corresponded to the power of refraction of the prism! For instance, he made the hypnotized individual believe that he saw on an empty table the profile of a portrait. Upon awaking, he saw the same picture, and was greatly astonished that the portrait was doubled, when F. placed before one eye a prism of whose qualities he had no idea. And even supposing that perhaps he saw that the glass was a prism and that he previously knew its power of doubling the image, he could not possibly know the index of refraction of the prism, and of his own accord so place the distance between the images, that it precisely corresponded to the power of refraction of the prism. If the base of the prism was placed upward, he saw one image over the other.

Also other glasses exert their specific influence over the visionary image. An opera-glass approaches or distances the image, according to which end is placed before the eye. The glasses must also be differently adjusted for the near-sighted and for the far-sighted, to enable both to see the image.—If a magnifying glass is placed before the image, this is enlarged. A microscope also enlarges the outlines of the illusory image; but investigators have as yet failed to produce by microscope any fine details, which are not seen by the naked eye; and that would be rather too much! With a mirror placed in the right position, a reflection of the visionary image has also been produced. That the hypnotized person, himself, does not know that the other image is a reflection may be seen by the following experiment. The hypnotized one is made to believe, that he sees a butterfly on a table that stands before a mirror. He immediately exclaims: "But there are two!" He is asked to catch them. First, he pierces the nearest one by a pin; then he tries to catch the image in the mirror, which is somewhat farther away, but he hits his hand against the glass; he renews the attempt, but says finally: "I cannot catch the other one!" Another experiment with the mirror is also convincing. If a hypnotized person is made to believe that he is reading a couple of lines, written or printed on blank white paper, and if a mirror is put on one side of the inscription, he will see two inscriptions, but will express

his astonishment that the new inscription is reversed, so that it must be read like Hebrew from right to left. If the mirror is placed above the writing, he sees the other image upside down; but this writing is read from left to right. There are not many who realize that all reflected images are in reality just like this.

The attempts to shut the illusory images out by means of a screen have varied so much in their outcome that no definite results can as yet be quoted.

How are we to explain this apparent genuineness of the illusory image, which even stands the test of the laws of optics? The only possible explanation of the above-mentioned, well-proved facts, which has as yet been tried by science, is that the hallucinate singles out some point in reality—a "*point de repère*"—which afterwards serves to guide him. The hallucinate would be immovably bound to this mark, and as the mark is subject to the laws of optics, so the hallucinate must also be subject to them. As a support to this theory, Binet and Féré relate a strange story from La Salpêtrière (Charcot's clinic) in Paris.

A woman in the somnambulistic state was shown a view of the Pyrenees with some donkeys climbing the slopes, and she was told: "This is your portrait; you are entirely naked." Upon awaking she happened to look at the same picture, and enraged at seeing her own image in such a nude condition, she tore the picture to pieces. But two photographs of the picture had already been taken and carefully hidden. Every time either of these photographs were shown to her-she became enraged; for she always saw in the photograph her own naked image, and this hallucination remained unchanged for two years. From this the consequence has been drawn that the view of the Pyrenees was only a mark, a *point de repère*, which always produced her own visionary image. This is at least an evident mark: but what should be said about the application of this theory to the white card-board, which did not seem to have any marks? And yet Binet and Féré once succeeded with the following experiment.

After they had produced a visionary portrait on a white card board, they took a photograph of the blank card-board. and the hallucinator saw the same portrait on the photograph, but not on other card-boards apparently just as bare. Here the imperceptible mark would also be photographed, if the theory is correct.

But we put the explanation aside and proceed to a new optical experiment, which proves that the optic laws are also valid in other respects in visual hallucination. Easy as it may be to produce by suggestion any color in an object, yet it is absolutely impossible to make a color-blind somnambulist see the color to which he is blind. If he is red-blind in one eye, a red visual hallucination cannot be produced to this eye, though it may be to the other. Visual hallucina-

tion also follows the laws of contrasts and complementary colors. If for instance, a white paper, divided into two halves by a line through the middle, is put before a somnambulist, and he is told that the right half is red, he will of his own accord see the green complementary color on the left half, without being told, and without having any previous idea that a complementary color would appear and that this should be green. This proves, among other things, that no deceit or simulation has any part in the play.

Many more optical observations have been made, but we have already lingered long enough on the visual hallucinations. There only remains to tell something about their duration. For the above-named general rule, that the memory of what has been experienced during hypnosis ceases upon waking, does not hold good with regard to all visual hallucinations. Some are totally forgotten; others can remain for a long time—as we have seen, even for years. Some describe how the vision fades and disappears even during the sleep; in others, this fading takes place shortly after waking. In some, this disappearance causes great sorrow and regret, just as a pleasant dream is missed upon waking to a dreary reality. Bernheim mentions a patient, who, upon waking, can still see her visionary rings, bracelets and other costly ornaments, but who grows quite sad, when she sees one after another disappear; and asks that she may keep them.

Another one is surprised at finding that the imaginary photographic pictures on blank card-boards grow paler from day to day, and finally disappear, but concludes that the photographs must have been poorly fixed. Even though it be stated, both before and after the suggestion, that it concerns only an imagination, the hallucination will yet often be quite obstinately retained. Thus, F. declared to his patient before she was hypnotized, that she was going to have a vision, which, upon awaking, she ought to reject with all her might, as something not real. That did not help; she still saw on the bare table a ten-franc piece of gold with its bust of Napoleon.—"But we have made an agreement with reference to this illusion; for you know that the gold piece is not real!"—She appeared quite astonished and said; "But I see and feel the gold piece;"—and she could not be convinced.

Generally, however, the hallucination disappears if the patient is told in a determined way that he has seen nothing, heard nothing, felt nothing, etc. Also the approach of a magnet usually destroys the hallucination. In obstinate cases it must be removed during a new hypnosis.

We will mention still another queer kind of hallucination. A real object can be so obliterated by an imaginary one of the same kind, that the hypnotized individual loses all sense of the former. For instance, a real bottle standing on a table, was shown to a somnambulist; it was then removed, but she was told that it still remained.

Upon awaking, she saw only the imaginary bottle; the real one could be held before her eyes and she did not see it; put into her hand and she did not feel it; struck with a key and yet she did not notice it. Her perception of the real bottle was paralyzed by her perception of the imaginary one.

We have lingered long on the visual hallucinations, because these are best adapted to illustrate the general qualities of all hallucinations. In the same manner, the most varied hallucinations, both positive and negative, of the other senses, can be produced by suggestion. Space here forbids the quoting of more instances; we will instead proceed to a still more important point, viz.: the influence of suggestion upon still higher spheres within mental life—upon *the will and actions.*

The change from illusions to suggestive actions is so much the easier, since the latter often have their immediate origin in the former. Generally, however, it is customary, in hypnotic experiments to directly prescribe an action by a *verbal* or written suggestion.

The order should be direct and decided. For instance, if I say: "If I had a watch, I would see what time it is," that has no effect; but if I say: "Let me see what time it is," the somnambulist pulls out his watch. Obedience is generally very precise. If I point out to the somnambulist a spot on a plane surface, one that is invisible, and that I, myself, can find only by minute, complicated measuring, and if I order him to drive a knife through that spot, when he awakes, he —dashes the knife without hesitation into precisely the right spot. A criminal action would be performed as punctually.

As we have before mentioned, a somnambulist is not an entirely dependant automaton; he has intelligence enough of his own to reach the aim of the prescribed action. He succeeds without necessarily being told how to proceed. For instance, the somnambulist is given a glass of water; she is made to believe that it contains poison, and she is told to poison a certain person with it. She gets no further orders. Afterwards, when she offers the glass, she says of her own accord, if, for instance, it is summer: "It is so hot to-day; would'nt you like a drink?" One, who was ordered to take a handkerchief, out of another's pocket, pretended that she was about to faint, staggered to and fro, and fell on the chosen victim, so that she could easily get at the handkerchief. Another, who had the same commission, went up and asked: "What have you on your hands?" and while the victim was looking at her hands, the theft was performed.

But such blind obedience is not always found in the somnambulists. Sometimes they are disobedient and make considerable resistance. The cause of this rests either with the hypnotizer or with the patient. The authority the former exerts over the latter depends partly on his personality and the influence he generally exerts over

his patient, partly upon the decision and severity with which at the time he has pronounced his order. If this is done with hesitation and too gently, the patient becomes hesitating and irresolute, when it is to be performed. But the opposition can also depend on the degree of firmness in the character of the patient, as also upon the quality of the ordered action. So much of his own personality remains in the somnambulist, that his inner nature, when good and peaceable, resists a prescribed crime. Only a cataleptic individual is a machine, a blind tool, without a will; the somnambulist is a person whose opposition can often be rather embarrassing to the operator. Even from the different motives, which the somnambulists give as reason for refusing to commit a crime, their true character can be understood. Order a theft, and one may answer: "I do not wish to steal, I am no thief," whereas another naively answers: "No, I might be seen." A third makes only slight objection and soon yields. For instance, "Go and stab that doctor!"—"Why? He has not done me any harm!"—"Yes! you must do it; I order it!"—"Well, since I have to, I suppose I must!"—Wakened, she looks at her victim with a treacherous smile, goes a few times around him, and suddenly dashes at him with the imaginary dagger which has been put into her hand. But the same person could by no means be made to do any harm to a person whom she loved. One could not be made to say his prayers; nor another to sing a mocking song which she had composed about the doctor; a third could not be made to sign a note for one million, although she signed notes for smaller sums without resistance.

One who performs an action on account of suggestion, is completely ignorant of the real motive of the act. He feels an irresistible impulse, which he cannot comprehend nor explain. Usually, the action is performed without further reasoning; but sometimes he tries to create some motive. He believes himself to act voluntarily, he is ignorant of the outside will that governs him. We borrow a couple of instances from Richet, who has more closely studied these occurrences. A woman was hypnotized and told to remove the lamp-shade. Wakened she said "You can not see well in this room;" and she took off the shade. Another time she was told that upon waking, she should put a great deal of sugar in her tea. When the tea was served she filled her cup half full of sugar.—"What are you doing?"—"I am taking sugar."—"But so much!"—"Certainly, and I shall take more," and she put in more sugar. Afterwards, she found the tea abominable, but said: "What then? It was foolish; have you never done anything, foolish?" Charcot's clinic furnishes the case of a somnambulist who was ordered to assassinate a strange doctor by means of a slip of card-board. As soon as she awoke, she assaulted her victim and stabbed the card-board dagger to the region of his heart. The doctor made believe that he fell.—"But why have you killed him?"—With

wild aspect, she answered: "He is an old pig! He had wicked designs against me."

We have already remarked, that, although the memory of occurrences during hypnosis generally ceases upon waking, yet the hallucination, caused by suggestion, remains, as does also the impulse to action, imparted in the same way; that this impulse lies completely hidden from consciousness and memory, until the time prescribed for the action has arrived; and that by suggestion the operator can thus cause an action on a certain future day and hour. Here we shall consider somewhat more fully this wonderful phenomenon corroborated by many.

In modern times it was principally Richet, who brought this phenomenon into prominence (in *Revue Philosophique*, March 1883.) He gives the following instance. "After B. had been hypnotized, I used to say to her: 'You will return to me on this day or that, at this hour or that.' She remembered nothing of this, when she awoke, but said of her own accord: 'When shall I return?'—'Whenever you can; some day next week.'—'At what hour?'—'At any hour you like.' —With astonishing precision, she always returned on the day and hour that I had prescribed during the hypnosis, although she did not remember anything, when she awoke. Even if the time were ever so inconvenient, she came at the appointed hour. Once when she arrived, she said: 'I do not know why I came now: the weather is terrible; I have company at home: I have been running to get here; I have no time to stay, but must immediately return to my callers. It is too silly! I do not understand why I came here. Can it be by some magnetism?'"

Beaunis relates the following suggestion with an interval of 171 days.

"In the afternoon of the 14th of July, 1884, I hypnotized Miss E., and gave her the following suggestion: "On the first of January, 1885, at 10 A. M., you will see me; I shall come to wish you a happy New-Year; after that is done I shall immediately disappear"—I did not mention this suggestion to anybody. Miss E. lives in Nancy. I was myself in Paris on the first of January, 1885. That day, Miss E. told a friend, a physician and several other persons, that on the same day, at 10 A. M., when she was in her room, she heard somebody knocking at the door. She said: 'Come in!' and to her astonishment saw me enter, and heard me with a cheerful voice wish her a Happy New Year. I immediately went out: she at once hastened to the window to see me leave the house, but did not see any further trace of me. To her surprise, she also noticed that I, at that season, had come to her in a summer dress. (The same clothes that I wore at the time of the suggestion.) Her attention was in vain called to the fact

that I was in Paris on the first of January, and could not have come to her on that day. Nevertheless she maintained that she had seen and heard me, and she is still convinced of that, in spite of my declarations that it was impossible."

This suggestion was thus fulfilled in every particular after 171 days; and Beaunis claims that it would have succeeded after a still longer time, even after several years.

Liègeois has succeeded with a suggestion of one year's duration. On October 12, 1885, he hypnotized in Nancy a young man, Paul M. already before subjected to hypnotic experiments. At 10.10 A.M., he told him during the hypnosis that the following would happen to him on the same day one year later. "You will go to Monsieur Liébault in the morning. You will say, that your eyes have been well for a whole year, and that for that you are indebted to him and to M. Liègeois. You will express your gratitude to both, and you will ask permission to embrace both of them, which they will gladly allow you to do. After that, you will see a dog and a trick monkey enter the doctor's room, one carrying the other. They will play various pranks and make grimaces, and it will greatly amuse you. Five minutes later, you will behold a trainer with a tame bear. This man will be rejoiced to find his dog and his monkey, which he thought he had lost; in order to please the company, he will let his bear dance also—an American grizzly bear, of large frame but very gentle—and you will not be afraid of him. Just as the man is about to leave, you will ask M. Liègeois to let you have ten centimes to give to the dog, who will beg, and you will give them to him yourself."

Liègeois and Liébault, at whose clinic the experiment was made, naturally kept the suggestion a secret, so that the somnambulist might not get any knowledge of it.

One year later—on the twelfth of October, 1886—Liègeois was at Liébault's before 9 A. M. At 9.30, as nobody had arrived, the former considered the experiment a failure and returned to his rooms. But at ten minutes past ten, the youth, Paul, who had better remembered the hour, came to Liébault and thanked him, but also asked for Liègeois. The latter arrived immediately, called by a messenger. Paul arose, rushed to meet him, and thanked him also. In the presence of fifteen or twenty reliable witnesses, the hallucinations now clearly developed themselves in Paul as they had been predicted one year before. Paul saw a monkey and a dog enter; he was amused by their antics and grimaces. Then he saw the dog approach him, holding a box in his mouth. Paul borrowed ten centimes from Liègeois and made a gesture as if to give them to the dog. Then the trainer came and took away the monkey and the dog. But no bear appeared. Nor did Paul think of embracing any one. With the exception of these two details, the suggestion had thus been fulfilled. The experi-

ment was ended. Paul complained of slight nervous weakness. In order to restore him, L. hypnotized him; but took the opportunity during the hypnosis, to ask for information about what had just happened.—"Why did you just now see that monkey and that dog?"—"Because you gave me suggestion of it on the twelfth of October, 1885."—"Have you not mistaken the hour? I thought I said at 9 A. M."—"No, it is you who remember wrong. You did not hypnotize me on the sofa I am now occupying, but on the one opposite. Then you let me follow you out into the garden, and asked me to return in one year; just then it was ten minutes past ten, and it was at that hour that I returned."—"But why did you not see any bear, and why did you not embrace Liébault and me?"—"Because you told me that only once, whereas you repeated the rest twice."

All those present were struck with the precision of his answers. and Liègeois had to acknowledge that Paul's memory was better than his own. Awakened after ten or fifteen minutes, Paul was entirely calm and had no remembrance of what he had just said during the hypnosis, nor did he remember what happened before the hypnosis in consequence of the suggestion of October 12th, 1885.

Many other reliable authorities might be quoted for such post-hypnotic suggestion, or "*suggestion à longue échéance*" as the French call it. Here is an instance from Bernheim.

Miss G. was given the suggestion that, five days later at the doctor's regular visit, she would complain of headache. That came true. Another day he said to her:—"In six days, in the night between Thursday and Friday, you will see the nurse come to your bed and pour cold water over your legs." On the following Friday, she loudly complained that the nurse had poured cold water on her legs during the night. The nurse was called, but natually denied it. He then said to the patient:—"It was a dream, for you know how I make you have dreams; the nurse has done nothing."—She emphatically declared, that it was no dream; for she had clearly seen it, felt the water, and become wet.

Another case was for a still longer time. In August, B. said to the somnambulist S. formerly a sergeant:—"What day of the first week in October will you be at leisure?"—"On Wednesday."—"Well, on the first Wednesday of October you will go to Dr. Liébault: at his house you will meet the President of the Republic, who will give you a medal and a pension."—"I will go there."—Upon waking he did not remember anything of it. B. met him several times, and gave him other suggestions in the meantime, but did not speak any more of this one. On the third of October, or sixty-three days after the suggestion, B. received from Liébault a letter with contents as follows: "The somnambulist S., was here to-day at ten minutes before 11. Upon entering, after he had bowed to M. F., who was in his way, he

turned to the left to my library, bowed respectfully in a direction where there was nobody, uttered the word 'Excellency,' stretched out his right hand, and said:—'I thank your Excellency!' I asked to whom he talked—'To the President of the Republic.'—No one was there. Once more he turned in the same direction, bowed respectfully and went away. Those who saw him, asked me if the man was insane. I assured them that he was as sane as they or I, but that another person acted through him."

Some days afterward, when B. met the sergeant, the latter declared, that the idea of going to Dr. L. had come over him quite suddenly on the third of October at 10 A. M.; that he had not had the slightest thought of it during the preceding days, and that he did not have any idea whom he was going to meet at L's.

Still another case from Bernheim. "On Saturday December 22, after having hypnotized Miss G., I said to her: "Three weeks from Tuesday—that is in twenty-five days—when I pass your bed during my mornings rounds, you will see in my company Monsieur V. P. You will give him a detailed account of your disease, and you will talk with him of things that interest you." Upon waking, she remembered nothing, did not speak of it, nor even mention anything to the pupils. During the interval, she received many other suggestions and had her picture taken in various attitudes. On Tuesday, January 15, during my rounds, I stopped as usual at her bed; she looked to the left and bowed respectfully: 'Ah! it is Monsieur V. P.' After some moments she answered an imaginary question: 'Well, I feel very much better; I have no more pain; unfortunately my knee is sprained; and I cannot walk except with an apparatus. She heard a new question and answered: 'Thank you very much; you know that I have nursed Mr B's child. If you would recommend me to him, he could get me a place in an infirmary.' She heard his imaginary answer, thanked him, bowed, and followed with her eyes the image of my colleague all the way to the door.—'Did you know that Monsieur V. P. would come to-day?'—'Certainly not'—she had no previous idea of it."

The following experiment with the same woman shows some remarkable characteristics of the somnambulistic memory and association of memories.

"One day her picture was taken, while she was awake; she was hypnotized and photographed in different attitudes of suggestion—such as anger, fear (she saw a snake), hilarity (she was intoxicated), contempt (for joking students), and ecstasy. Some days afterwards B. said to her during hypnosis: 'When you awake, you will open the book that is lying on your pillow, and there you will find your picture.' (In reality, there was no picture in the book.) Upon awaking, she takes the book, opens it, immediately finds her picture, and asks to be allowed to keep it, in order to send it to her son.—'Do

you find it good?'—'Very good! I have a serious expression.'—'Well, turn the leaf.'—She turns it and finds another portrait—one in which she has the expression of anger. She continues to look, in the book, and finds all the photographs taken with the different expressions—of fear, joy, contempt and ecstasy. With perfect exactness she describes every attitude, that she had taken when photographed during the hypnosis, without now remembering that she had been photographed in these attitudes, and she became very much astonished, when I told her of it."

The above instances are sufficiently clear and are based upon sufficiently reliable authority to prove fully that an idea, inspired even long before, during hypnotic sleep, reappears spontaneously in the brain at a certain time, without appearing to memory or consciousness during the whole interval. Nay! This hidden, latent memory seems to be much surer, much more reliable, than the wakeful one, which very easily forgets details that are minutely preserved by the latent, somnambulistic memory.

How shall we explain this strange phenomenon? That is no easy matter. For this purpose, the brain has been compared to an alarm clock, which can be arranged so that it rings and wakens the sleeper at a certain minute. The mechanism of the brain, however, is not so simple. The difference is too wide. The alarm must continuously, incessantly and exclusively work for its aim, in order to reach it, the way of the wheels can be followed, cog by cog, second by second, until the alarm rings. In the brain only the terminal points can be observed —the beginning and the end, the setting and the "striking;"—but no intervening work is seen; and to judge by all the signs there is none. The brain seems to work on thousands of other ideas during the interval, but not on the suggested idea, which at the proper time seems to come like lightening from a clear sky. We must acknowledge our complete inability to explain this: we can only point out that something similar is to be found in those who have the power of waking from natural sleep at a desired hour, although the sleep will then be uneasy and light, and the waking is generally not so punctual as in the case in question. Moreover, dogs are often in the habit of reminding their masters of the right time for an undertaking, if the hour is neglected.

Negative suggestion are those which manifest themselves by a lessened or suppressed activity of the nervous system, whether it be in lameness, insensibility, dullness of the senses, or suppressed will: inability to think, talk, act, etc. This kind of phenomena has also been called *psychic paralysis*.

We have seen how every sense can be separately hypnotized and neutralized, how persons can be made insensible, blind, deaf, etc.: but by suggestion "systematized anœsthesis," so-called, can also be produced; that is, several senses can be hypnotized at one time, the

total effect of which is, that a person can be made wholly to disappear to a somnambulist, so that the latter neither sees, hears, feels, nor in any way perceives the presence of the other. In this way a person present can even be made partially to disappear, so that only his head, arms, hands, or feet become perceptible; and the queerest situations can thus be caused; or the somnambulist can be made to perceive an object or a person with *one* sense, and not with the other,—so, for instance, that he hears a person standing beside him but does not see him; but does not feel his touch. The following is an experiment by Beaunis and Liègeois, performed in the presence of Liébault and a number of others.

Liègeois made Mrs. A. believe, that, upon awaking, she would neither see nor hear Beaunis, but that she would feel his touch and remain "*en rapport*" with him by this alone. This came true. When she awoke, B. sat down directly in front of her; she did not see him. He spoke to her, she did not answer. He took her hand and she immediately recognized him. She saw, heard, and spoke with the other persons present. B. made some passes so that she went to sleep. Now she was "*en rapport*" with B. only; she heard him and spoke to him, but did not see or hear any of the others. Liègeois spoke to her; she did not hear him. L. tried to waken her—it was impossible! Beaunis wakened her, but everything was as before; she neither saw nor heard B., while she saw and heard all the others, and was conscious of B. only by the touch. Not until Liègeois had banished the negative suggestion which he had given her, did she see and hear Beaunis. The same experiment was repeated several times in the same way, except that other persons were made the objects of her negative perception, and always with the same success.

Binet and Féré quote another experiment of the same kind.

During the sleep, they made the patient believe that, upon waking, she would not see one of them, viz. Féré, but that she would still hear his voice. When she awoke, F. placed himself in front of her; she did not look at him. He gave her his hand; she did not move. Soon she expressed her astonishment that she did not see F., who was but just now in the room, and asked where he had gone—"He has gone out; you may now go to your chamber."—F. placed himself in front of the door. The patient, arose, said good bye, and went toward the door. When she was about to open it she stumbled against F's invisible body. This unexpected shock made her tremble. Once more she tried to advance, but when she met the same invisible and inexplicable obstruction, she grew frightened and refused to approach the door again. They then took a hat from the table and showed it to her; she convinced herself, with both eyes and hands, that it was a real hat; then they put the hat on F's head. She saw the hat, but as if floating in the air; nothing could describe her astonishment. F.

took his hat off and bowed with it several times; and her astonishment grew still greater, when she saw the curves that the hat described in the air, without seeing any one holding it. She declared that it could be explained by physics, and believed that the hat was suspended by a thread. She climbed a chair to feel of the thread, but she did not find any. They put an overcoat on F.; she saw the coat in the air, taking the shape of a human body, and was still more astonished; and she said: "It is like a hollow dummy." The invisible F. now performed several tricks with furniture and other objects, which to her appeared to move by themselves. Articles of furniture moved about in confusion and then put themselves in the right places again; pieces of a skull, which were spread over the floor, put themselves together and separated again; a purse opened of itself and let out gold and silver coins.—They now made her sit down. While she was talking to B., F. alternately touched her nose, cheek, forehead and chin. Every time, she put her hand to her face. Being asked why she did that, she said that she felt a peculiar itching in one place and another on the face, so that she had to scratch. This she took very calmly and found quite natural. She was then asked to strike the air with her fist. F. stopped her arm, just as she lifted it.—"What is it?"—"Oh! it feels just like cramp in the arm." She immediately found some explanation.

Thus when, by negative suggestion, a person is made invisible to a somnambulist, not only he, himself, disappears to the perception of the latter, but so also do his clothes, and even such things as he takes out of his pockets—such as his watch, handkerchief and key.

But, some one might object, what proof have you that the somnambulist does not really see or perceive in such cases? It might be a deception or a simulation!

Another experiment is convincing in that respect.

It is known that a stroke of a gong immediately puts certain hysterical women into the catalepsy. Two such women were at Binet and Féré's quarters. They were hypnotized and made to believe that upon waking they would neither see nor hear the sound of the gong; in other words, a hysterical *anœthesia*, with the gong as object was suggested to them. When they awoke, the gong was moved, right before their eyes, to a place close to their ears; they did not show the usual fear of this instrument; a violent blow was struck on it; they did not move, they did not become cataleptic as usual. It was evident that they neither saw nor heard this large and loud-sounding instrument. One of them, however, showed slight surprise and said she seemed to have heard something—like a gust of wind in a stove. A reversed test was immediately made. They were again hypnotized: they were again made sensitive to the gong by removal of the negative suggestion and when they awoke the instrument produced its customary effect.

A negative suggestion may remain for days—even months—if it is not removed. Otherwise *anœsthesia* disappears of itself after some time, though not all at once, but only by degrees, so that the person or the object, which was made invisible, gradually comes forth as out of a mist, and is recognized at first dimly, then more clearly. In the above mentioned case, where Féré was made invisible, the patient, on the third or fourth day, first began to see that F. was a person; but at first she took him for an entire stranger, whom she had never seen before, and not until later did she understand that it was Féré.

Another experiment was only partially successful. A patient who was for the first time submitted to negative suggestion, was made to believe that, upon awaking, she would not see the assistant, C., whose name and appearance she knew well. Upon awaking, however, she saw C., but did not recognize him in the least. Shortly before, the same patient had been given the visual hallucination that she saw C's portrait on a blank piece of white paper. This paper was now given to her, and after she had several times compared the imaginary portrait with the strange person she saw, she recognized that it was the assistant, C.

But negative suggestion does not stop at these illusions,—it can also cause a complete delirium, of which the following may serve as an illustration.

A patient was made to believe that she would not see Féré, but would hear his voice. Upon waking, when she heard F's voice, but did not see him, she began to search all over the room, asking anxious questions. She was then told: "F. is dead, but his soul is here; it is the latter that is speaking to you."—The intelligent woman would certainly have taken this for a joke, if she had been fully awake; but under the influence of the suggestion she easily accepted the explanation. Soon F. raised his voice again; he said that he had died during the night, and that his corpse was removed to the morgue. The woman clapsed her hands and assumed a sad expression. She asked when he was going to be buried; she desired to be present at the cememony. "Poor boy," she said, "he was not a bad man." F. sighed deeply and complained about the post-mortem examination of his body, whlch had already taken place. The scene began to be tragic. The woman became faint with emotion, threw herself backward, and began to have a hysterical attack, which, however, was immediately checked by pressure on the ovarian region.

This case shows that those under the influence of a suggestion are not so much awake as they appear. Judgment and criticism are to a great extent suppressed by the suggestion, and the subject is as one in a dream, or like one temporarily insane. This condition may reasonably be called an *artificial insanity*.

That negative suggestion with reference to pain has a very great significance in therapeutics will be shown later.

Moreover the *memory* can become the object of a negative suggestion, and total or partial loss of memory—amnesia—with reference to certain things and circumstances can be produced in this way.

A common experiment of traveling magnetizers is to make a person forget his own name. The victim then makes the most comical effort to find it, but does not succeed. In the same way the somnambulist can be made to forget the year of his birth, the names of his nearest relatives, certain vowels, consonants, numbers, etc. *ad infinitum.*

By suggestion the memory can be acted upon not only in a quantitative direction, suppressing or strengthening it, but, what is worse, also in a qualitative respect, so that it can be changed; it can be given another, a fictitious or false tenor. As hallucinations can be produced which first appear in the future, so retro-active hallucinations, so-called or hallucinations of memory can also be produced. For instance, the hypnotized person can be made to think that on a certain occasion he has witnessed this or that occurance, and in his memory these facts afterwards remain impressed with such vividness, that without hesitation he will tell them as the truth at a serious trial before a court. It is easy to imagine the dangerous conseuqences of such hallucinations if they are abused before a jury.

The whole motor apparatus also may by degrees or all at once become the object of negative suggestion, and by this all kinds of lameness or paralysis can be caused.

Also, independently of hypnotism, lameness has been found as the result of purely psychical causes. In 1869, Russel Reynolds, the prominent English physician, published a case of lameness in consequence of spontaneous imagination of the sufferer ("dependent on idea"). A young girl lived alone with her father, who, after various sorrows and reverses, grew lame. In order to support the family the girl had to give lessons, and for this purpose had to walk long distances. With anxiety she soon began to think that she also might become lame, and that their condition would then become still worse. Under the influence of this idea, which never left her, she began to feel her legs grow weaker and weaker, until she could no longer walk. R., who soon understood the cause, adopted an exclusively mental treatment; he gradually convinced her that she was able to walk, and she soon became entirely well. (What an excellent case for a Boltzius!)

Erb, the neurologist, also describes imaginary paralysis.

Charcot, Bernheim, and others have, however, produced the greatest number of proofs of how easily paralysis is caused by hypnotic suggestion. Here the lameness may be confined to one muscle, or to a whole limb, or to certain combined muscular movements con-

cerned in a certain action—such as sewing, writing, smoking, singing, speaking, playing on the piano, standing, walking, etc., etc. By negative suggestion, such anœsthesia can be produced just as well as systematized paralysis. It would take too much space further to discuss the many kinds of paralysis that can be caused, not only with reference to the external result, but also with reference to the internal mechanism. In the former respect, there are as many possibilities as there are ways of using all the muscles of the body. In the latter respect, there are a few important differences, which we have time merely to indicate here. Thus lameness, for instance, may arise from the paralyzing of one or more muscles, so that they cannot perform any kind of movement; another form of lameness is the paralysis in co-ordination, or the suspended co-operation of the muscles for a certain object, for instance, inability to write, "agraphia," where the muscles of the arm and hand can perform everything except the combined motions that are necessary for guiding the pen. Finally, the paralysis may be still more deep-seated in the centre of the nervous system, as when, by suggestion, I affect and suppress the will, cause want of will—"abulia,"—when only the *stimulus* of the will is needed to make the muscles perform their work. All these kinds of paralysis are best removed in the same way that they are produced—by suggestion.

We now proceed to a still more obscure sphere for the influence of the nervous system and suggestion on the human organism, viz. the sphere of *vegetative* life, the functions of organic life, embracing digestion, nutrition, growth, production of heat, circulation, secretion, etc. The hypnotic experiments have so much greater importance and significance in this branch, and are so much more convincing and probative, as these functions are not dependent on the influence of the will, and hence do not leave room for any deceit or simulation which could make the experiment dubious.

We begin with Beaunis' experiment of changing the beatings of the heart by suggestion. Both Liébault and Beaunis had noticed that by suggestion they could relieve palpitation and regulate the action of the heart in somnambulists. This subject B. submitted to strictly scientific investigation with the aid of the usual instruments of physiologists for recording the movements of the heart; and he found clear proofs of the fact, that the heart could be made by suggestion to beat more slowly or more rapidly, probably by stimulating or paralyzing action on the inhibitory centers of the heart.

Beaunis's next experiment in this respect was to cause, by suggestion, redness or congestion in a limited part of the skin. For this purpose he hypnotized Miss E., and told her that upon waking she would have a red mark on the spot which he then touched; and he

placed his finger on her forearm, but quite lightly, so that, in ordinary cases, a redness could not arise from the pressure. About ten minutes after her waking, a slight redness began to show itself on the forearm, at the place that he had touched; it gradually increased and by degrees disappeared, after having been visible for ten or fifteen minutes. By suggestion he could also make the mark remain from twenty-four to forty-eight hours, while she was closely watched so that she could not herself produce or preserve the red mark.

We know that redness and pallor are caused by dilatation and contraction of the blood-vessels, and that these changes in the vessels are under the influence of the vaso-motor nerves: but these nerves are not affected by the will; at least, not so that, in the wakeful state, congestion or redness can be produced by the will alone in any desired part of the skin. To a certain extent, of course, the face can be made to blush or grow pale in connection with some affection; and actors especially are in the habit of cultivating their power in this respect: but from this it is a long step to the effect gained by suggestion, as mentioned above.

But this is not all; by suggestion a much more heightened effect can be produced in this direction. The congestion may be carried still further—to a raised swelling of the skin, to a blister (as from Spanish flies), to bloody transpiration and bleeding, even to complete formation of a wound. Concerning this, Beaunis relates the following experiment, for the truth of which he vouches. A skilled physiologist and experienced experimentalist, he would not allow himself to be easily deceived.

The experiments were made on a young girl—Elise F.,—first by Facachon, then also by Beaunis. One day, when Elise complained of a pain in the left groin, F. made her believe, after he had hypnotized her, that a blister would form on the aching spot, just as from a plaster of Spanish flies. The next morning, there appeared on the left groin a blister filled with serum, although nothing had been applied there.

On another occasion, he cured neuralgia in the region of the right clavicle by merely causing, by suggestion, a blister resembling in every respect an ordinary burn. Afterwards several such experiments were successfully made on Elise. We quote only one, which was made under the closest control, before the eyes of several scientists—Beaunis, Liébault and others. On the twelfth of May, in 1885, Elise was hypnotized toward 11 A. M. On her back, at a point which the girl could not possibly reach with her hand, a strip of eight gummed stamps was fastened, after a strip of the same kind had for eighteen hours been applied to the arm of another person, without causing the slightest effect. Over the stamps an ordinary bandage was fixed, so as to simulate a plaster of Spanish flies, and she was three times given to understand that Spanish flies had been applied to her. She was close-

ly watched during the day and was locked up alone in her chamber over night, after she had been put in hypnotic sleep with the assertion that she was not going to awake until seven o'clock on the following morning,—which took place punctually. An hour later, F. removed the bandage in the presence of Bernheim, Liègeois, Liébeault, Beaunis, etc. It was first ascertained that the stamps had not been disturbed. They were removed and the underlying surface of the skin now showed the following changes: on a space of four or five centimetres the epidermis was thicker, yellowish white and inflamed, but as yet not raised into blisters; the surrounding skin showed intense redness and swelling to the extent of half a centimetre. The spot was covered with a dry compress, in order to be further investigated later on; three hours after, the spot had the same appearance. At four P. M. the spot was photographed, and it now showed four or five blisters, which also plainly appeared in the photograph. These blisters gradually increased and secreted a thick, milky serum. On the twenty-eighth of May—fourteen days later—the spot was still in full suppuration.

On the thirtieth of May, F. produced by suggestion another Spaniel fly blister on her arm.

This case is not the only one. On another girl—Marie G.—who had for three months suffered greatly from neuralgia, F. produced by suggestion two such blisters in succession, each the size of a five-franc piece, one below the left ear, the other on the left temple. These required forty-eight hours to become fully developed. The neuralgia disappeared after twelve hypnotic sèances. After these successes, F. tried on Elise an experiment in the opposite direction, that is, by negative suggestion to make a real Spaniel fly plaster inactive. For this purpose a plaster was cut into three parts; the first was applied to Elise's left arm, the second to her right arm, the third on a sick person who needed such treatment. Elise was hypnotized and F. made her believe that the plaster on her left arm would not have any effect. This took place at 11 A. M. Elise was closely watched until 8 P. M., when the bandage was removed, after F. had satisfied himself that it had not been disturbed. On her left arm the skin was unchanged, on her right the skin was red and showed the beginning of a formation of a blister. The plaster was again applied; after three-quarters of an hour a normal blister was found on the right arm, but on the left—nothing.

The third piece, which was placed on the abdomen of the other patient, had raised a large blister after eight hours.

Several other physicians have related similar facts. As early as 1840, Louis Prejalmini, the Italian physician, mentions similar experiments, when with "magnetized paper" he caused the same effect as with Spanish flies. It is evident that the active cause was not the magnetized paper, but the suggestion, or imagination.

By suggestion Dumontpallier (in 1885) produced not only local redness, but also a local increase of temperature of several degrees and Beaunis, by the some method, has produced general increase of temperature throughout the body, and perspiration.

Bourru, Professor of Medicine in Rochefort, and Burot, of the same place, in this way caused nose-bleed and perspiration of blood in a hysterical man, who was paralyzed and without feeling in his right side. One of them wrote his name on the arms of the hypnotized man with a blunt instrument, and said: "To-day at 4 P. M. you will fall asleep and the lines which I have now drawn on your arms will bleed." At the prescribed time he went to sleep. On his left arm, the letters apppeared raised and very red, readily distinguishable from the surrounding pale skin, and from several of the strokes blood was dripping. On the arm which was paralyzed, nothing appeared.

Dr. Mabille has since seen the same man several times during fits of hysteria, when he himself loudly ordered the arm to bleed. and the bleeding afterwards appeared.

Still another experiment with the same man, and one witnessed by several physicians, is worth mentioning. He was hypnotized: a letter was inscribed on his left wrist, with the order that he should immediately make it bleed. "It hurts," the patient said.—"Still you must bleed!"—Then the muscles of the arm contracted; the forearm swelled: a letter appeared, red and raised; drops of blood trickled out and were clearly seen by all present. The experiment only failed. in that the bleeding letter was not the one that had just been written. but another higher up on the arm, from a previous experiment. The suggestion may not have been clear enough in this respect. But this deviation from what was intended was so much the more favorable in one way, as through this, full guarantee was received that the congestion was at least not caused by reflex when the drawing took place on the skin.

Charcot and his pupils have often produced real burns by suggestion. These are not developed immediately but several hours later.

From the experiments quoted we now get a clear explanation of the *stigmatization* practiced during the Middle Ages, and even in modern times—religious fanatics reproducing in their own persons the *stigmata*, or wounds made in the hands and feet of Jesus Christ by the nails which fastened him to the cross. For such marks can be produced by means of hypnotism, without deceit and without the miracles of higher powers.

How sensitive the skin is to the slightest irritation from without or within is shown by the "artificial nettle-rash" (*urticaria factitia*), which can be produced in a few minutes—even in the form of raised names—by merely writing on the skin with a blunt instrument. The difference between this and the above-mentioned case consists principally in this, that the nettle-rash is a result of a reflex irritation from

the skin on the vaso-motor nerves, while the irritation by suggestion passes through the brain.

Féré records the case of an hysterical woman who, even in the waking state could produce tumefaction in any part of the body by merely fixing her concentrated attention on it.

The effect of suggestion upon several other organic functions has also been determined; for instance, secretions can be increased or suppressed,—as urine, perspiration, tears, milk; the menstrual flow can be increased or decreased.

All these experiences in some degree corroborate and explain the great influence of imagination on various purely organic and vegetative changes in diseases: they also explain the fully corroborated effect of such cures as the homœopathic, Count Maffei's wonder-cures by magnetized water, and other means in themselves indifferent. We will devote a separate chapter to the important role that imagination or suggestion plays in the curing of diseases.

Mental suggestion. In our description of the many effects of hypnotism and of the wide influence of suggestion, we have arrived at phenomena more and more wonderful and difficult to understand. Until now, however, we have been somewhat able to follow the natural ways suggestion chooses for imparting the ideas and will of one man to the brain of another. We now come to a group of phenomena in which the ordinary mental routes and stages in the journey of ideas from one brain to another are disregarded and the interval is passed with one leap—we refer to the effects of the so-called *mental suggestions*, which might be defined as *transmission of thought*, and which, from a certain point of view, also embraces *mind-reading*. For, by "*suggestion mentale*," the French mean the operation by which thought, sensation, will, or any psychical force affects the brain of another, directly, in what may be called an immaterial manner, without manifesting itself by anything perceptible to the external senses,—neither by words, looks, gesture, posture, etc., as in the forms of suggestion previously discussed.

It is with a certain hesitation that we enter upon this as yet mysterious subject; but it should be said of this and equally of magnetism and hypnotism generally, that their abuse by charlatan and the knave must not obscure the real facts which a conscientious scientific investigation has brought to light; and even though the explanation may be difficult, it is useless to deny and conceal facts of whose reality many experienced scientists and other sensible persons of the most civilized countries are already convinced.

Besides all the private experiments in families, where the control cannot be so satisfactory, there are especially three scientific societies, which have occupied themselves a great deal during the last few years

with this kind of phenomena, viz: *The Society for Psychical Research* in London; in America, a society of the same name as the English one; and in Paris, *La Société de Psychologie Psyologique.* The first-named society counts among its members many prominent scientists, such as Balfour, Stewart, Barrett, Lodge and Thomson, all, professors of physics; Macalister, professor of anatomy; Adams, professor of astronomy; Professor Lidgwick, A. R. Wallace, etc. In the French society, Janet, Richet, Ochorowicz, Beaunis and others have made substantial contributions to our knowledge of this subject.

In order to give the reader a clear conception of what is meant by mental suggestion, we quote here an experiment which Beaunis, assisted by Liébault, made on a young man who was a good somnambulist, and who came accompanied by his female cousin. L., who hypnotized him, said to him: "Upon awaking, you will perform the action of which those present are now *thinking.*" Beaunis then wrote with a lead-pencil on a piece of paper: "Embrace his cousin." He showed the paper to L. and the others and asked them to read the writing with their eyes only, without moving their lips. When the patient awoke, they were to think intently of only that which he was to do, without telling him of it and without aiding him by any sign. Shortly after awaking he began to laugh and hid his face in his hands.—"What is the matter?"—"Nothing."—"Of what are you thinking?"—No answer.—"You know that you will do something that we are thinking of.. If you do not wish to do it, tell us at least, what you intended to do."—"No."—"If you do not wish to say it aloud you may whisper it to me."—He whispered to B.: "Embrace my cousin." After he had once overcome his modesty by telling it, he also did it with a good grace.

By this experiment, made with every precaution, Beaunis was convinced of the possibility of mind-reading and transmission of thought, although he had previously been the greatest of skeptics. Several successful experiments convinced him that these phenomena could not be explained as being either guesswork or accident.

A characteristic experiment by Liébault may also be quoted here. Miss L. was hypnotized. In order not to betray the secret by uttering it even in a low tone, L. wrote on a slip: "When she awakes, she will see her hat changed from black to red." The slip was shown to all the witnesses. L. and one of his friends put their hands on her forehead and repeated *in their minds* the written phrase. She was informed that, upon awaking, she would behold something strange; and after that she was wakened. Without any hesitation she immediately stared at her hat, and laughing aloud she exclaimed: "That is not my hat: it certainly has the same shape but it is not mine: give me my hat!"—"But what difference is there in it?"—"You know very well: you have eyes as well as I."—It was a long time before she would say

how the hat had changed; she complained instead that we were mocking her. Pressed by questions, she finally said: "Of course you see that it is entirely red!" And she refused to take it, so that L. was obliged to restore to her eyes by suggestion the true color of the hat.

The experiments just mentioned, which with reference to scientific accuracy and control leave nothing more to desire, thus prove unquestionably that, at least with the aid of hypnotism, one person—the hypnotized one—can directly understand what takes place in the brain of the other—the hypnotizer—without the usual mediation—perception by the external senses. We will soon show that this discovery is by no means new, but that it is a fact universally observed and acknowledged by the old-time magnetizers, although it was then onesidedly explained by emanation—transmission of the magnetic fluid. But it is a novelty of our time, that the same phenomena can be produced, even without the help of hypnotism, in certain wide-awake persons, especially sensitive to them, although in these persons, a somnambulic state of a more latent kind might be supposed. The one who made this last discovery was the American, Dr. McGraw, in 1875. In the following year Professor Barrett of Glasgow made several observations in the same direction. The material for such investigations was easily found by the thought-game, which was then the fashion in English families, viz.—"mind-reading," by the English popularly called "the willing game."

This game is generally played as follows. One of the company is selected for "percipient" or thought-reader, and he leaves the room; then the others agree to *think* of something that the thought-reader (generally blindfolded) is to perform, when he re-enters the room; for instance, to blow out a certain candle, strike a certain note on the piano, sit down in some one's lap, kiss some one, find some hidden object, open a certain page of a book etc. This can be varied infinitely. Usually the thought-reader is led by some one—the "agent"—who should then with special intentness think of the thing that is to be done, without purposely giving, in the slightest degree, any indication by pressure or pulling. However, thought-reading, performed in this manner, has not the slightest value as scientific proof in this delicate question. The results may be ever so surprising; the acting persons may be ever so honest and act *bona fide*; yet, as long as the leader in any way touches the thought-reader, the possibility always remains that the movements of the former—perhaps involuntarily—lead the latter on the right track. We know how sensitive a horse is to the slightest touch of the rein.

Hence to make convincing an experiment of thought-reading or thought-transmission, the first condition is that no contact should take place between the thought-transmitter and the thought-reader; for only then can the possibility of transmission by means of the touch be

avoided. It is evident that mediation by the senses of sight and hearing must in the first place be prevented.

Mental suggestion, by the English called also "transmission" and "telepathy," might more properly be termed *thought-transmission* than *mind-reading*. These words certainly express the same thing from different points of view; the former from that of the acting or willing person, the latter from that of the percipient. But as the former is generally more active, the latter more passive, and as the action of the former even in time precedes that of the latter, the term "mind-reading" should be changed to thought-transmission, especially as the first word might easily cause the false conception, that the thoughts of others may be read against their will, although only rarely would this succeed. But not even the word "thought-transmission" expresses the whole idea of mental suggestion. For as we shall soon show, not only thoughts can be directly transmitted, but also other psychical functions, both lower and higher, such as sensations, ideas, modes, affections, impulses, effects of the will etc.

From these phenomena must be carefully excluded, not only those which can in any way be explained as arising through conscious or unconscious mediation by the external senses, but also those which may depend upon mere accident or ordinary guessing. In this last respect, modern investigators, with the aid of the strictest calculation of probabilities, have distinctly marked the limits of hazard or the power of guessing; and they have shown that various genuine phenomena have so far crossed this border, that the influence of hazard may without the least doubt be set aside.

As effects of mental suggestion, we may with reason put down various "miraculous" occurrences during the Middle Ages and later, as also some of the astonishing results of the magnetizers.

St. Augustin mentions a St. Albicerius, who gave undeniable proofs of his ability to read the thoughts of others. The hysterical and ecstatic individuals of the Middle Ages and of later times developed mental powers so extraordinary as to be deemed superhuman and not explainable save by some supernatural agency: such persons were held to be possessed by evil spirits, and often it was the business of the exorcists to find whether the possessed could read and discover the thoughts of others. Thus Father Surin tells how the possessed nuns of Loudun exercised this power. When he asked one of them to do what another priest was thinking of, she went to the alter and took the Gospel of St. John, exactly what the priest had in his mind. Another priest gave five or six of these silent mental orders, one after another, to one of the possessed before she had time to execute one, and he "tormented the spirit saying: 'Obediat ad mentem:'" and the spirit loudly repeated all the orders beginning with the first one, but adding: "This the father does not desire;" and he did not stop until he had repeated them all.

In 1635, Gaston, Duke of Orleans, officially testified that one of the Loudun nuns had accurately obeyed an order that in his mind he had silently given her. Such was at that time taken as the surest proof of one's being possessed. Father Surin, the Jesuit, swore that "the spirits of the possessed had more than two hundred times revealed to him very secret things that were concealed in his thought or about his person."

The first one who mentions instances of mental suggestion in somnambulists was the Marquis de Puységur, in 1784. His servant, Viélet, (mentioned in our historical review), showed a decided ability as thought-reader. P. himself writes: "After I have magnetized him, I do not need to speak to him; I *think* before him, and he hears and answers me. If any one enters the room, he sees him, *if I wish it.* He speaks to the stranger and tells him only what *I wish* him to say. If he is about to say more than he ought, *I check* (in my mind) his ideas, his phrases (often in the middle of a word), and I completely change the direction of his thoughts.

A couple of years later, similar observations were made by Petetin, a prominent physician and magnetizer of Lyons. Those who made suggestions with the will alone were called *volontistes.*

Also Deleuze, the learned librarian of the Jardin des Plantes, declared (1813) that good somnambulists obey your will without your speaking to them.

A number of authentic proofs from the days of the ancient magnetism might be related, but we hasten to the modern and much more decisive experiments with mental suggestion on persons not hypnotized, and we will group the phenomena according to the different parts of the suggestion.

Transmission of sensations. According to unquestionable testimony, there are a number of cases of somnambulists, both in ancient and modern times, showing ability to *feel* the hidden sufferings of others, to feel another's pain in the corresponding part of their own bodies, and in this manner, without further direction, to discover the internal disorders of others. This form of mental suggestion has been called "organic sympathism." In 1825, the Paris Academy of Medicine found this question to be of such importance, that they appointed a committee who investigated the matter for five years before they published their report, written by Dr. Husson and wholly corroborating the above mentioned power of the somnambulists. However, the over-wise old fogies of the French academy were so frightened by this report that they concluded not to have it printed. That this did not suppress the truth, the later history of the subject proves.

Omitting the more or less convincing reports of all the magnetizers we turn directly to the scientific experiments performed in our day, under strict control, which give unquestionable proof that not only

pain and sensations or mental perceptions, but also moods, affections and even specific perceptions of taste can by mental suggestion be transmitted from one individual to another.

Thus in 1885, P. Janet related before *La Société de Psychologie Physiologique* of Paris, that Mrs. B. seemed to experience most of the sensations which appeared in the person who hypnotized her. She thought herself to be drinking, when he drank; she plainly felt the taste of various substances that Janet, her hypnotizer, put into his mouth, such as salt, sugar, pepper, and this even though he was in another room. When in one room he severely pinched his arm or leg, she—in the adjoining room—screamed and complained that she was pinched, and she always named the place, where he had pinched himself Janet's brother, who had the same influence over her, went into another room while she was in the lethargic-somnambulic state, when she was most sensitive to suggestion. He burnt himself severely on one arm. Immediately Mrs. B. began to cry and complain so that J., who was with her, found it difficult to hold her. she complained of a smarting pain above her right wrist. J., who did not know on what part of the body his brother was going to burn himself, convinced himself that it was on this very place. When she awoke, she still complained of such severe pain above her right wrist, that a cold compress had to be applied: but she had no idea whence the pain had come. All the next day the pain continued, and then also appeared swelling and redness.—the latter symptoms possibly because she had rubbed the spot.

In 1883, the London "Society for Psychical Research" made the following experiment. Wells, a young man twenty years of age, was hypnotized by means of passes by Smith, who afterwards placed himself behind the chair where Wells (hypnotized and blindfolded) was seated. During the first series of experiments Smith held one of the patient's hands; but this proving unnecessary, all contact between S. and W. was avoided during the ensuing series. S. was pricked and pinched on various parts of his body, and during an otherwise complete silence, W. was each time asked if he felt anything. These were the results·

The first series. Jan. 4, 1833.

1.—The upper part of Smith's right arm was pinched several times.—About two minutes later Wells commenced to rub the corresponding place on his right arm.
2.—Pinching of the neck.—W. mentioned pain in his neck.
3.—A blow on the left calf.—Correctly indicated.
4.—Pinching of the lobe of the left ear.—Correctly indicated.
5.—Pinching of the back of the left hand.—Correctly indicated.
6.—A blow on the upper part of the back.—Correctly indicated.
7.—Pulling of the hair.—W. localized the pain in his left arm.
8.—A blow on the right shoulder.—Correctly indicated.

9.—Pricking of back of the left hand. Correctly indicated.
10.—Pricking of the neck.—Correctly indicated.
11.—Stepping on the toes of the left foot.—Unnoticed.
12.—Pricking of the left ear.—Correctly indicated.
13.—Blow on the left shoulder.—Correctly indicated.
14.—Pinching of the right calf.—Was localized in the arm.
15.—Pricking of the left hand.—Correctly indicated.
16.—Pricking below the right ear.—Correctly indicated.

Thus the experiment was successful in thirteen cases out of sixteen; really a striking result.

The Second Series. April, 10, 1883.

The same persons. Wells blindfolded and separated from Smith by a screen. During some of the experiments, Smith was in another room, separated from that of Wells by a thick curtain.

17.—Pinching of Smith's right ear.—After two minutes Wells exclaimed: "Who is it that is pinching me?" and began to scratch his right ear.
18.—The upper part of the left arm was pinched.—Correctly indicated, almost immediately.
19.—The right ear was pinched.—After a minute W. put his hand to his right ear, as if he wished to drive off a fly, and he said: "Will you leave me alone!"
20.—Pinching of the chin.—Correctly indicated, almost immediately.
21.—Pulling of the hair.—Unnoticed.
22.—Pinching of the neck.—Correctly indicated immediately.
23.—Pinching of the left ear.—The same result.
24.—Salt was put into S's mouth.—W. exclaimed: "I do not like to eat candles." (Five minutes before, the word "candle" had been mentioned.)
25.—Ginger put on the tongue.—"I do not like things that burn; why do you give me pepper like that?"
26.—Salt on the tongue.—"What ill-tasting candy is that?"
27.—Wormwood.—"You hurt my eyes; I do not like mustard."
28.—Pinching of the right calf.—W. grew angry and refused to speak. Finally he violently stretched his right leg and scratched his calf.

After this experiment W. became desperate did not want to answer questions, saying that if he did they would continue to pinch him. (During this Smith had continuously been pinched on his calf.) Also on other occasions it has been found that pulling of the hair is generally not transmitted.

If any of our readers are not satisfied with this record, but desire more of the kind, to show how pains of another's body can be felt and

precisely localized; how different-tasting substances placed in the mouth of another can by mental suggestion be distinguished by the percipient or "thought-reader"—in a somnambulic state or not,— we refer them to the careful and well-corroborated reports, which may be read in the "Proceedings" of the above-mentioned society in London, as well as in "Phantasms of the Living" in two large volumes, published in 1886, in London, by Gurney, Myers and Podmore.

The most common form of mental suggestion is perhaps the transmission of images to the eye, or visual hallucinations: and this is done, not by *verbal* suggestion but by direct transmission of the images without words or signs—in other words, without the aid of the external senses, but wholly mentally.

These experiments are very easy to perform; there are also numerous reports of successful attempts in that direction. Such reports are more convincing, if they are accompanied by drawings of the hallucinations. In the above-named English works, there are series of such drawings, where there is an opportunity of comparing the original image with the transmitted one.

Experiments were made in Liverpool, in 1883, by Malcolm Guthrie, with either Miss Relph or Miss Edwards as percipient, without their being hypnotized, while G. or some other person was the agent. Agent and percipient were placed opposite each other at a table, with a screen between them, so that they could not possibly see each other's papers. In another room, or so that the percipient could not possibly see when and how they were done, simple figures were drawn on the agent's paper. The agent now sat down and stared intently at one figure at a time. The percipient sat with blindfolded eyes on the other side of the screen. As soon as she claimed mentally to perceive the figure at which the agent was staring—and this usually occurred within a few minutes—the bandage was removed and she then drew the figure as it appeared to her interior sight. The most varied drawings were more or less correctly reproduced; once the figure was reversed.

Then a series of experiments was made with the same persons by Dr. Oliver Lodge, professer of physics at University College, Liverpool, with such gratifying success, that this skilled experimentalist declares these tests to be as reliable and convincing as any other physical experiment. One of Lodge's experiments is very interesting, as it shows how the percipient can take different impressions from several agents at one time. The impression on the percipient is usually strengthened, if several agents are looking at or thinking of the same thing at the same time. It may also happen, that if at one time, several persons are thinking of quite different figures or objects, the percipient becomes so confused that no result is obtained. But

in one of Lodge's cases, it happened that the percipient got a clear conception of the different figures of two agents. One had a square at which to look, the other an oblique cross; neither knew the other's figure, nor did the percipient know that they were different; nor were the agents in contact with the percipient.

Soon the percipient said: "I see figures that move around each other—I think I see two figures—first I see one and then below that another—I do not know which I am to draw—I cannot see either plainly." Then Lodge said: "Well, draw whatever you have seen." She removed the bandage and drew a square first. Then she said: "And then there was another figure—but they both seemed to mix." —And she drew an oblique cross diagonally in the square, but afterward remarked: "I do not know why I put it inside."

The figures that the agents were looking at were and ×; and the figure drawn was .

Transmission of an idea or of an act of the will. It is difficult to make any distinct difference between an idea, a detailed perception and a simple act of the will, when their influence by mental suggestion on the brain of another is concerned. They are usually inseparably connected with each other, because the will must contain some idea in order to become a concrete act of will and not merely an abstraction; and on the other hand an idea cannot be transmitted or suggested except by an act of the will. Hence we must consider in inseparable connection such mental suggestions as principally contain an idea or an act of the will.

We have already shown that where the producing of hypnotic sleep is concerned, the *idea* of sleep and the will of the hypnotizer play a very important part. The only question now is whether such an idea or act of the will can in a purely *mental* way be transmitted to the object and produce sleep. Can the idea of sleep be called forth, or can the patient be hypnotized, or wakened out of hypnosis, by a silent act of the operator's will, without the patient's perceiving his purpose by means of his external senses? Here belong the questions:

1.—Can any one be hypnotized without knowing it?

2.—Can any one be hypnotized at a distance from the operator, without previous agreement?

3.—Can any one be hypnotized against his will or in spite of a strong resistance?

The only modern author, who gives a distinctly negative answer to these questions, is Bernheim; but in his description of facts he contradicts himself. Various experiments from both ancient and modern times prove on the other hand that all the three questions must be answered in the affirmative. Omitting the older proofs, we quote some modern ones, from which the reader may judge for himself.

That animals can be hypnotized without their knowledge and will is shown by the many successful experiments which have been made on crabs, frogs, hens etc. Oftentimes the attempt to hypnotize persons, when they were in a natural sleep, has met with success. In such cases the will or imagination of the hypnotized could not have co-operated.

But we let the following reliable facts speak for themselves.

Ochorowicz mentions (1887) a Dr. S., in whose house a somnambulist—Miss X.—was sitting at a table while he walked the floor. Suddenly he saw another lady coming to the house. As he had his reasons for not letting the somnambulist see this lady, during his walk he made a gesture behind her head for the purpose of hypnotizing her. She saw nothing of this, but immediately fell asleep and slept soundly, while S. received the other lady and conversed with her After she had gone, he only blew on the somnambulist, who, immediately awakened, found the doctor walking as before, and had no idea that he had talked with any one else, nor that she herself had been asleep.

Although the case does not with certainty prove that she was hypnotized by mental suggestion alone—for she might have felt the draught from the gesture behind her—yet it shows that she was hypnotized without her own will.

With the same lady Ochorowicz made the following experiment. In a company where she met O., she declared that she, who had not been hypnotized for a long time, had now become so strong that she could even hypnotize O. He lent himself to the joke and allowed her to try. Very much interested, she took hold of his thumbs and stared at his eyes. He pretended to fall asleep, but suddenly he opened his eyes and stared at her with the full intention of hypnotizing her; and after a few seconds, she fell asleep herself. She was allowed to sleep for three-quarters of an hour and was subjected to several experiments. O. then reassumed his sleeping position, blew on her, so she awaked, and still pretended to be asleep himself. She clapped her hands triumphantly, while the company laughed at her for still believing that she had succeeded in hypnotizing the doctor.

Thus this time she was hypnotized against her will and without her knowledge.

Another girl, fourteen years old, strong and healthy, who used to be hypnotized by O. only to show the experiments to other physicians, was persuaded by her friends not to allow these experiments any longer. So one day she obstinately refused to let herself be hypnotized, and would not give herself up to the influence even at the request of her parents—"Well Miss, do you not think I can hypnotize you against your will?"—"No: I shall not sit beside you any more."—O. then took his handkerchief which was lying on the table, threw it at

her and said: "Well, now it is done; in five minutes you will be asleep!"—"That will make no difference to me," she said; but she withdrew, afraid of meeting his eyes.—"It will not help you to run away; you will return of your own accord."—Half an hour later she returned in a perfectly somnambulistic state. Thus she was hypnotised not only without co-operating with O., but also with the full determination to resist the hypnosis with her will. This does not alter the fact, that a strong will in less sensitive persons can counteract and delay the sleep, just as the co-operation of the subject's will always promotes it.

In these two cases however, the subject knew that the hypnotizer was in the vicinity, and in the last case she also knew of his intention. But there are proofs that not even this is necessary for hypnotizing. A person who is lying in his deepest natural sleep, who has never seen the magnetizer, and who suspects nothing, can be exposed during this sleep to the gestures of the magnetizer—merely to his will—and by this means he will fall into somnambulism and execute the other's orders; and the next morning he will awake without remembering anything of this.

O. had a patient who was rather difficult to hypnotize. One evening, when he came later than usual, he found her asleep over a tiresome novel—in a perfectly natural sleep. O. then put her into the hypnotic state, first into lethargy for a quarter of an hour and then into somnambulism, when he talked to her. Then he wakened her.—"Oh! are you here? Please hypnotize me immediately, because my legs ache."—"But I have already hypnotized you and the ache is gone."—"That is true—it really feels as if the ache were gone."—But she would not believe that she had already been hypnotized. Another time when the pain was very severe, she had in vain sent for O. who had gone away. He came to her however in the night, but found her unconscious, in full delirium and writhing in pain. He spoke to her. She did not answer. He then put his hand on her head and hypnotized her within five minutes. (O. mentions that, for special reasons, she went to sleep more easily when she did not know that he was present.) The pain immediately disappeared, and she was ordered to sleep calmly all night. She slept well, and upon awaking, had not the slightest idea of the doctor's visit.

Both Ochorowicz and Voisin have succeeded in hypnotizing mentally diseased persons against their will.

In 1884, Perronet, a modern *volontiste* produced very strong evidences that the hypnotizer in many cases needs no other means for hypnotizing or awaking than his own firm will.

P. omitted as superfluous one external means after another, first the fixing of the eyes, then the passes, and even the order, "Sleep!" Finally it was enough for him merely to concentrate his thought or his

will on the subject who was to fall asleep. He abstained from all mimical or phonetic symbols of this will, which was alone concentrated for the purpose. A person, susceptible to hypnotism, did not need to be previously prepared by any word or sign. As she sat in the midst of her work or at conversation, she would immediately fall a victim to his silent will, with eyes and limbs fixed in cataleptic tetanus.—"Why are you asleep? Do wake!"—"You know that I cannot waken myself."—"Why?"—"Because you wish me to sleep."—"How do you know that? I have not asked you to sleep."—"No, you have not said it; you say the opposite, but that is in jest; I know that you wish me to be asleep."—"What shall I do to awaken you?"—"Only will it."—"Then," Perronet relates, "I directed my will on her waking without betraying it by look or gesture; and she immediate awoke."

Pierre Janet also states as his experience that all manœuvres towards hypnotizing a person are of no avail, if the thoughts of the operator are distracted and if his will does not co-operate. Héricourt also agrees with this.

Although the facts hitherto mentioned are by many scientists considered sufficient proofs for the theory that a magnetizer can govern his subject with his will alone, without giving any perceptible expression to it, yet we demand still stronger evidence of the existence of a purely mental suggestion. For, as long as the magnetizer is in the same room as the subject, it may be possible that the generally sharpened senses of the latter can, at the right moment, perceive some slight external sign of the magnetizer's will, and that the suggestion is still in some imperceptible way transmitted through the senses. Only when the operator is in another room or at a distance, can one be perfectly sure that there is no possibility of ordinary communication between him and the subject. Consequently the question would arise: Is there such a thing as mental suggestion from a distance? Below are given some facts, which seem to show that such suggestion really exists.

We have already mentioned various cases which cannot be explained except by transmission—at least from a short distance—of an internal image or idea from one brain to another, without mediation through the senses. But if such transmission can take place from a distance of one yard, there is only a small degree of difference if it is transmitted from a distance of ten, one hundred or one thousand yards. If a screen does not interfere, certainly a door, a wall or a whole house ought not to prevent the transmission. Yet it is not to be expected that it should follow from this that the distance is of no consequence at all. For this circumstance is not so wholly immaterial but that it must be considered as dependent on the laws of matter: and as sound and light act both at a short distance and from afar, though much more feebly in the latter case, so we must expect the power of mental suggestion also to decrease with the distance, and soon to find a limit

that cannot in ordinary cases be overpassed. With this restriction in our demands and expectations we will now consider the remarkable cases that belong here. It was not in connection with experiments of mind-reading, nor only yesterday, that phenomena of this kind were discovered. Even Mesmer and the earliest magnetizers knew of them. But in order to go immediately to scientific and fully recognized authorities, we turn to the physicans of the Hotel Dieu hospital in Paris. One experiment made there on the fourth of November, 1820, is recounted by Dupotet as follows. "Subjects are sometimes found of such sensitiveness, that they can be acted upon through walls and partitions, on occasions when it could not possibly be supposed, that they have any knowledge of your intention. They feel your presence; they know when you absent yourself; they go to sleep and wake according to your will.—We were all assembled in the usual room for our séances, with the exception of the sick woman. Husson, the physician to the hospital, said to me: 'You must try to put the patient to sleep without her seeing you, and without her knowing of your arrival here.'—I said that the effect from a distance was dependent on her susceptibility. However I was placed in an adjoining room, separated by a thick wall and a door which was locked. At the sign agreed upon, I began to magnetize, without making the slightest sound. The patient, who sat in the next room, a few feet from the wall that separated us, expressed her astonishment that I had not come, and consequently she did not expect any magnetizing. Three minutes after I had commenced to magnetize by directing my will on it, she fell into ordinary somnambulism.—On the seventh of November I renewed the experiment before Prof. Recamier, who took all the necessary precautions. He placed the patient more than six feet away from the wall that separated our rooms, and with her back turned to it. She was told that I was not going to come, and she intended to leave. The instant R. asked her whether she could digest meat—that was the sign—I began to magnetize: three minutes later she was asleep. When the remark was made that the success of this second trial might depend upon the fact that the arrangement was quite similar to that of the first one, a reverse experiment was tried:—the same preparations were made for the third time, but without my being present in this room or the next. A sign was also given, but no inclination to sleep appeared. Later, when I arrived, I easily put her to sleep."

Such experiments were soon repeated at most of the larger hospitals in Paris, and they convinced many prominent physicians of the great influence of the will in magnetizing. Lafontaine, a physician, magnetized several persons from a distance, and among others, from his rooms—under strict control—a patient who was in the mayor's office, at a distance of half a kilometre. It was stated that she became sleepy after one minute and fell asleep after five.

Dr. Dusart relates a still more extraordinary experience. He had put a patient to sleep in the evening but had forgotten to tell her at what time she would be allowed to awake the following morning. He first remembered his negligence when he was seven hundred metres away, but as it was too far to return, he conceived the idea that as he could mentally affect her from a distance of one or two metres, he might just as well do it from a longer distance, so in his mind he now formulated the order that she should awake at eight A. M. the next day. When he arrived there at half past seven, she was still asleep.—"How is it that you are still asleep?"—"I only obey you."—"You are mistaken; for I left you yesterday without giving you any orders."—"Very true; but five minutes after you had left me, I distinctly heard you say to me, that I was to sleep till eight A. M."—He did not dare to believe that his will had been effective at such a distance, but thought that she had inferred the hour, as he usually let her sleep till eight A. M. In order to make still another experiment, he told her that she might now sleep until he awakened her. In his home, seven kilometeres away, he gave her, at two P. M. the mental order that was to waken her. He drove to her house, and her parents told him that she awoke at precisely two P. M.—On the first of January he ceased to visit the patient, and he had not seen her since, when on the twelfth, during a walk, at a distance of ten kilometres from her home, he conceived the idea of trying to influence her in spite of the great distance. After the first of January the doctor's visits had ceased, and her father had magnetized her. It was ten A. M. when D. in his mind *forbade the patient to let herself be put to sleep by her father.* After a while he regretted it, as he thought that the order might hurt the patient; he therefore countermanded it.—He was greatly astonished when, the next morning, he received a letter from her father, saying that at ten A. M. the day before, when as usual he was going to put his daughter to sleep, he did not succeed until after a long and painful struggle; once asleep, she had declared that it was by order of the doctor that she resisted, and she did not go to sleep until he allowed her to do so.

Dr. Héricourt writes as follows in 1885.

"Soon my soporific influence extended not only from one end of the room to the other, but also from one room to another and from one house to another, even if they were far apart. One day, when I was in my room, I conceived the idea of trying to put to sleep a Mrs D., who lived in another street about three hundred metres distant. It was 3 P. M. when I was walking to and fro and intently thinking of the result I should obtain. I now had to visit a couple of patients and forgot Mrs. D., whom I had agreed to meet at a public promenade at 4.30 P. M. I went to the premenade but did not find her there at the appointed hour. I then concluded that my magnetizing from a distance

had been successful; and at 5 P. M. I intently thought of awaking her. I met her in the evening. Of her own accord and without my referring to the question, she then told me why she did not come to the promenade; that about three o'clock, when she was in her chamber, she had suddenly been seized with an irresistible desire to sleep; her eyes became heavy, her legs refused to carry her and she had hardly time to go into her parlor before she sank on a sofa. Her servant came to speak to her, but found her pale, cold and rigid, as if she had been dead. The girl could only make her open her eyes. A severe headache, from which she was then suffering, disappeared of itself at 5 P. M.'

Under the strictest control, H. made several such experiments with the same lady; sometimes when he was in the same room with her, he told her that he was going into the next room, from whence he would put her to sleep. He went there but was instead thinking of keeping her awake. When he returned he was ridiculed, because "he had not been able to put her to sleep." On other occasions, he stole into another room and put her to sleep whenever he chose.

P. Janet reports [in *Revue Scientifique*, May, 1886] similar results from experiments made by him and Dr. Gibert on a Mrs B. One day at 11.30 A. M., Janet requested that G. should, from the room where they were sitting, hypnotize Mrs. B., who was in her home at a distance of at least five hundred metres, and who suspected nothing, as she was never hypnotized at that hour. J. then went to her house, found her quite awake, and hence supposed that the experiment had failed. He then hypnotized her in the usual manner, and before he asked her any question she said: "I know very well that Gibert wished to hypnotize me, but when I noticed it I dipped my hands into cold water in order to prevent the sleep; I do not wish to be hypnotized like that and made a subject of conversation and ridicule."—She had really dipped her hands into cold water before J.'s arrival. The peculiar circumstance of this case is, that while she was yet awake, Mrs. B. had received a certain intimation of the fact, that some one was trying to hypnotize her from afar, and that she could prevent it by cold water.

Another day J. asked G. to hypnotize Mrs. B. from his room at 11.40 A. M., without telling her of it beforehand. At 11.45 A. M., when J. came to her with several witnesses, she was lying on a chair in an uncomfortable position, fast asleep and completely insensible, and those present could not awaken her. She said: "Why send them here? I forbade you to play me such tricks. Why does Gibert hypnotize me from his room? I did not have time to put my hands into cold water—I will not!"—Janet tried in vain to exert any magnetic influence over her; he could neither cause contracture nor awaken her, he even had to send for Gibert, under whose influence she still remained. When he arrived, he easily awakened her.—Afterwards

an experiment was made which showed G.'s influence from a distance during the sleep also. With the same lady Janet then made eight experiments, hypnotizing her from a distance at unexpected hours, and they were all successful. Out of twenty-two experiments, made partly by Janet and partly by Gibert, to hypnotize her from a distance, only six failed and among those were the first three, before she was used to it. On the other hand it was accomplished sixteen times in the most complete manner. This certainly cannot depend upon chance.

Mental suggestion can overcome distance, not only in space but also in time ("*suggestion mentale a échéance*"), that is to say, the will of the operator can be executed at a later time prescribed by him, and not merely at the same moment—as we have seen in the verbal suggestions.

Again our operator is Dr. Gibert, and the subject is Mrs. B., whom we already know. He put her into lethargic sleep; during this deep slumber he approached his forehead to hers and for some moments he concentrated his thoughts on the order that he silently gave her in his mind, without uttering it aloud to any one. But he wrote it on a paper, which he gave to Janet in a sealed envelope. The order was to be executed on the following morning between eleven and twelve o'clock. The next day J., went to Mrs. B's. At 11.30 A. M. she appeared very uneasy, left her kitchen where she then was, ran into another room and seized a glass, with which she hurried into the parlor to J., and asked him if he had called. On his answering in the negative she again rushed into the kitchen and then into the parlor several times without knowing what she wished. Soon she fell down, hypnotized from afar by Gibert. During her sleep she said: "I trembled when I came to ask you whether you had called me; I had to come, but it was not nice to come like that with the glass; why do they wish me to carry glasses around? I do not wish you to do like that."—Janet opened the sealed order, which contained: "Offer a glass of water to each one of the gentlemen." Though the suggestion had not been completely executed, it was evidently a good begining in the right direction.

A couple of days later the order: "Lock the front doors of the house to-morrow at noon!" written and hidden away by Janet, was in the same way suggested by Gibert. On the following day about noon, Janet found her front door locked, contrary to the usual custom. Mrs. B. had locked the door herself. On being asked why, she said: "I felt so tired and I did not wish you to come and hypnotize me."—She was very uneasy, walked to and fro in the garden, picked a rose, and ran to look into the letter-box at the door. The strangest circumstance of these actions was, that they were just the ones that J. and G. had agreed to suggest, although they had finally decided on the above-named order. Mrs. B. had evidently also been impressed by their first plans, although these had been discarded.

A day or two after this she was, in the same mental way, given the order to walk twice around her garden with an opened umbrella, the next day at noon. At the prescribed hour she became uneasy, made two turns through her garden, but did not open any umbrella. She was hypnotized and said: "Why did you make me walk around the garden? I looked silly! If it had only been the same weather as yesterday!" (it rained that day.) "But to-day I should have looked ridiculous."—The weather was pleasant, and hence she could not induce herself to open the umbrella, although the thought of it and the impulse to it pursued her.

We have now collected a number of coincident experiences (from different periods and different persons), of which at least the more modern ones have the stamp of careful, scientific investigation; and these seem to give an unquestionable answer to the three questions enumerated above.

Clairvoyance. While "animal magnetism" was in vogue, this name was generally given to the wonderful gift, found in a great many somnambulists, of seeing clearly in darkness—both literally and figuratively speaking,—that is perceiving by the external senses with supernatural acuteness, and also to grasping by the internal sense things that were beyond the natural power of conception, in addition to a certain divinatory or prophetic power of reading the thoughts and feelings of others; of discovering hidden things; of predicting future events; of speaking foreign languages, etc. Nothing has been so misused in the service of humbug and charlatanry as the clairvoyance. The narratives that are cited in evidence must consequently be received with the greatest caution. But even after the most careful selection, so much that refers to the subject still remains, that it proves worthy of scientific investigation; and the best key for solving these enigmas we have doubtless already found in hypnotism and especially in the modern theory of suggestion. The sharpened wits of the somnambulist and particularly his susceptibility to suggestion, sufficiently explain most of the phenomena which have been quoted as proofs of specific clairvoyance; and for the present we adhere to the opinion that there is no specific clairvoyance beyond the limits of the influence of these powerful factors.

After we have become acquainted with the silently working, purely mental suggestion, which plays pranks both known and unknown to the operator, generally unknown to the subject, and always unknown to the bystanders, with its aid it is by no means difficult to explain numerous "wonders" of clairvoyance. The many cases where a somnambulist has exhibited unusual and (for her degree of culture) inexplicable medical knowledge, might best be explained, at least when a physician was present, by the fact that it was the knowledge and ideas of the physician which were transmitted to her brain,

usually unbeknown to him, by mental suggestion, and which for the moment made her so learned. When like a prophetess she tells the thoughts, secrets or past experiences of persons present, who are to her entire strangers, she has most likely received her information in the same way;—and thus vanishes the *nimbus* of the supernatural art of divination with which she has been surrounded. However it should here be remembered, that although such thoughts and memories, which for the moment are clearest to him who transmits the suggestion, are more easily transmitted to the somnambulist, yet there are cases which seem to indicate that also the contents of a clouded memory can in this way be brought out. It is for this reason that the somnambulist will sometimes tell things which are not in the thoughts of any of those present—which perhaps have been forgotten by him whom they concern—but of which at least enough memory remains to make them recognized as true by those concerned.

The following instance has been reported by Robert-Houdin, the famous magician and *prestigiateur*. (A testimony from such a person about inexplicable phenomena produced by others, ought to be the best proof against deceit and trickery.) Robert-Houdin, who was practised in the art of imitating the acts of somnambulists, wished to try whether he could also learn to imitate the famous somnambulist, Alexis. He describes the experiment thus: "After Alexis had taken hold of my wife's hands, he spoke to her of past events that concerned her, and especially of the painful loss of one of her children, of which all the circumstances were described with perfect exactness." The skillful magician, who did not easily allow himself to be deceived or suprised, declared that he was quite puzzled. "These were not like my usual tricks—neither dexterity nor *escamotage*. Here I witnessed a higher, more incomprehensible power, of which I did not have the slightest conception, and in which I should never have believed, had I not with my own eyes seen the clear facts. I was so overcome that the perspiration dripped from my face."

In the same company there was a very skeptical physician—Dr. Chomel—who also wished to convince himself by his own eyes. He gave Alexis a small box. A. felt of it without opening it and said: "It is a medal; you got it under peculiar circumstances. You were then a poor student living in Lyons. A laborer, to whom you had done some service, found this medal among some rubbish and thinking that you would like to have it, he climbed your six flights of stairs to offer it to you." All was literally true. Such things, however, one cannot guess at.

Some months later Robert-Houdin again visited Alexis. He then gave A. a letter which he had just received but had not yet opened. H. knew only from whom it was and not what was in it. It bore the Boulogne stamp, but had come from England. A. immediately said it

was from England and gave a very minute description of the writer. He made one mistake, in calling him a book-seller. Upon being corrected, he said that he saw him in a room filled with books, which much resembled a book-store. Such was really the room where the writer had his office. Alexis could not describe the contents of the letter.

This case strongly corroborates our theory just mentioned of the true nature and cause of clairvoyance, so-called. A. knew as much about the letter as H. did himself, but not one bit more.

On numerous occasions somnambulists have read folded letters; these have generally been placed on the pit of the stomach. I am fully convinced that they have not been able to decipher other letters than those whose contents were known to some person present—best of all, to the magnetizer himself.

Phreno-hypnotism. By this name Braid designated a group of hypnotic phenomena which reminded him of the old phrenology of Gall. Both Braid and other magnetizers have shown that special regions of the brain can be affected by hypnotism, so that a pressure on the skull or a mere pointing at certain parts of it produces phenomena depending upon supposed underlying motor or sensory centres in the cortical part of the brain, or it puts into activity mental faculties which are *supposed* to be located in these regions. As all the facts appertaining to this subject can not be explained by a defective or fallacious observation, the same explanation must be given of these phenomena as of clairvoyance: that here the chief motor is not the pointing with the magnetizing finger at a certain region of the brain but it is the directing of the magnetizer's thought and will on a certain expected result. Thus these phenomena also are easily explained by mental suggestion. A very convincing case was recently reported by a French physician. As we know, it is now on good grounds supposed that the faculty of speech has its seat in the foremost lobe of the left half of the brain. With his attention directed on this, the physician made his experiments so that he alternately pressed first on the left, then on the right side of the somnambulist's forehead. Every time he pressed on the left side the patient became speechless, but when he pressed on the right side speech returned. During these experiments he was disturbed, so that instead of pressing on the left side as he intended, he unconsciously pressed on the right side. The patient then also became speechless, which clearly proves that all depended upon his thought, and not upon his hand or on which part of the head was touched at the time.

Much more could be said about the great role that seems to be played by suggestion and especially by mental suggestion in the causing and explaining of various miraculous phenemena, so called, which

can be found not only within hypnotism, but also within the sphere of everything mystic—not least within spiritualism—and even in every-day life. But it remains for the science of the future to throw more light on this subject which is still wrapped in obscurity.

CHAPTER IX.

HYPNOTISM AS A REMEDIAL AGENT.

IMAGINATION is a thing that is looked upon with a certain contempt. With the phrase: "it is only imagination," persons believe themselves to be rid of the matter. Imagination however is without doubt one of the greatest resources which the human soul possesses: and with this force, rightly used, man can achieve what are by the ignorant accounted miracles. In all times mankind has more or less consciously—and generally less—used magnetism and hypnotism in the service of therapeutics. Manifold are the ways of using these forces for the curing of diseases. The principal means for this purpose has always, although often unconsciously, been suggestion or imagination. Hence the proper name for this curative method is now-a-days neither magnetic nor hypnotic cure, but *suggestive therapeutics* or *imagination-cure*. The realists of our day have altogether too great an inclination to scorn the mystic words: "Faith helps." Through suggestion these words begin to get their scientific explanation and their mystic veil begins to be lifted.

But it is not exclusively by suggestion that the hypnotizer can favorably affect certain diseases. Hypnotism in itself can also be used without the aid of suggestion, as an anodyne and as a means of soothing and invigorating, because of the sleep and insensibility it produces. On account of these qualities, hypnotism has been used for sleeplessness, for occasional aches, and to make surgical and obstetrical operations free from pain. But these purely hypnotic effects are also strengthened and prolonged by suggestion. The difference is easily understood. If I put a patient suffering from some pain into so deep an hypnotic slumber that he becomes insensible, the ache will disappear during the sleep, but will continue when he awakes, unless the pain was of such a nature that, like a short paroxysm, it has ceased of its own accord during the time he was asleep, just as it would even if he had been awake. A more lasting pain, however, is relieved by hypnotism only during the sleep; but if the suggestion be added that the pain shall not be felt at the awaking, the ache, which would otherwise have begun anew at the waking, is often checked. Thus suggestion in this case gives an important addition to the effect of hypnotism.

From the description of the physiological effects of suggestion on the human organism, it can be approximately estimated what can be expected from it when used in therapeutics. It goes without saying that it has its first and best field of action in diseases of the nervous system, and among these, principally in functional or dynamic disturbances—those which do not depend on any perceptible destruction of tissue or organic defect in the nervous system—and preferably, such disturbances as have been caused by imagination or in a psychical way. But we have also reason to expect some effects on pathological states of the lower organic or vegetative life.

A brief summary of the results that have already been gained by magnetic, hypnotic, or suggestive therapeutics, will show us in what measure these expectations have been fulfilled.

The "wonder-cures," which have in all ages been made by oracles, priests, exorcists, charlatans, magicians, and "wonder-doctors" in general, have almost all been achieved through hypnotism and suggestion, although the visible means have alternately been oracular responses, magic sentences, exorcisms, laying on hands, holy wells, sweating-cloths, amulets, relics, magnetized tables, magnetized trees, homœopathic globules, bread-pills, colored water, etc. To witness a brilliant sample of this unconscious method of suggestion, we invite the reader to pay a visit to Father Gassner, the great exorcist, when he is just performing the wonder-cure which we have already mentioned in our historical review.

Emilie, a young German girl nineteen years of age, daughter of an officer in a princely court, had for two years and a half suffered from convulsions; she was almost cured by a physician in Strasbourg, but to make sure, she also desired to visit Father Gassner, the famous thaumaturge, who was then sojourning in Ellwangen, a small city fifty miles from the girl's home. The girl was cheerful and in good health during the whole journey, and was present for two days at Gassner's conjurations without feeling sick. When she finally spoke of the disease that she had had and from which she had been cured by a physician, the priest declared that she was by no means cured, and that her disease was so much the more dangerous as it was latent throughout her body; as a proof of this he promised both to produce the disease anew and to cure it radically by exorcism.

Gassner immediately made an experiment. He ordered "the evil spirit" to show himself first in an arm, then in a leg, and again in her whole body, and the spirit always responded by convulsions in the place indicated. G. ordered him to make the girl scream, roll her eyes, and show the most violent attacks of the old disease. It all stopped however as soon as Gassner pronounced his "*cesset*" (cease)! This was the first time the priest had spoken to the spirit in Latin, and the spirit was so polite as to listen to this language. (The girl

had learned Latin at home!)—This however was declared to be only a test-cure. The real cure would be made with more *èclat* before a large and select company, in order to display Gassner's great ability in exorcism.—Before a brilliant assembly, among whom was also Dr. Bollinger, the cure began by the priest exhorting Emilie to put her faith in God and the Saviour, whose power over the evil spirit was the only thing that could cure her. Then he placed her on a chair in front of him and began a series of conjurations in Latin, of which we only quote the following:

"*Præcipio tibi, in nomine Jesu, ut minister Christi et Ecclesiæ veniat agitatio brachiorum quam antecedenter habuisti!*" ("As the servant of Christ and the Church, I command thee in the name of Jesus, let the jerking of the arms appear, which thou hadst before!") Emilie's arms began to jerk.

"*Agitentur brachia tali paroxysmo qualem antecedenter habuisti!*" ("Shake the arms in such paroxysm as thou hadst before!")—She fell backward in the chair and extended both arms.

"*Cesset paroxysmus!*" ("Let the paroxysm cease!")—She rose quickly and appeared well and happy.

"*Paroxysmus veniat iterum, vehementius ut ante fuit et quidem pertotum corpus!*" ("Let the paroxysm come again, more vehemently than before, and that through the whole body!")—The paroxysm reappeared. Bollinger found her pulse rapid and uneven. Her feet were lifted to an equal height with the table, and her arms became so stiff that two persons could not bend them, etc.

"*Cesset paroxysmus in momento!*" ("Let the paroxysm cease instantly!")

In this way Gassner continued for a long while, sometimes producing, sometimes stopping the convulsive fits, or pain in various parts of the body, or laughter, weeping, wrath and all kinds of mental emotions; he ordered her to run out and come back again; he alternately conjured away the senses of sight, hearing and speech; he all but made her insane. Finally he ordered the spirit to leave her forever, so that she might become well. The "spirit" always understood how to obey his Latin! From the standpoint of that time this was certainly an evident proof of thaumaturgic power; to us it is a clear proof of the influence of verbal suggestion on a hysterical woman.

That Mesmer, Puységur and many magnetizers have cured various nervous ailments admits of no doubt. Braid also endeavored to make hypnotism a curative ageney, and in many cases he had decided success. But what interests us most is to find out whether besides Braid other educated physicians and noted scientists have also succeeded in using this agent in the service of therapeutics. The flavor of charlantery and mysticism, which was given by the magnetizers to

the practice of hypnotization, has for a long time deterred physicians from meddling with such a thing, and this certainly to the great disadvantage both of the science and the public. Until lately, but few physicians have had sufficient knowledge of the benefits of hypnotism, and sufficient courage to investigate for themselves a subject held in such bad repute. Among the first experiments we find the endeavors of surgeons to use magnetic sleep as an anodyne in more serious operations. As early as 1829, Cloquet succeeded in this manner in amputating without pain a woman's breast. In 1845, Loysel of Cherbourg made painless amputation of a leg. Broca and Follin used hypnotism when making incisions in ulcers; also Velpeau and other French surgeons made use of hypnosis as an anodyne in their operations. Most of them however found chloroform more convenient.

From 1850 to 1860 hypnotism was used on a large scale by Dr. Esdaile, head-surgeon at the hospital of Calcutta. In six years he performed six hundred operations on hypnotized Hindoos, and a committee of surgeons and physicians appointed by the Indian government testified to his great success, which was chiefly derived from the fact that the most difficult operations could usually be made without a sign of pain from the patient, and without memory, when they awaked, of what had been done to them. The Hindoos, however, are said to be very susceptible to hypnotism.

A few obstetricians have also successfully used hypnotism to render delivery and obstetrical operations painless. But those who have done most to exhibit the great power of hypnotism and suggestion in the curing or alleviation of various internal complaints (especially of the nervous system), are first of all by many years Liébault and the physicians of Nancy, and in later years Bernheim with others, as well as some Paris physicians, such as the psychiaters Voisin and Luys, also Fontan and Ségard, two Toulon doctors, and Delboeuf of Belgium.

Some remarkable cases may be mentioned here.

For instance Voisin relates: "On the thirteenth of December in 1885 I loitered about the square of a country town in southern France, while waiting for a train. A peasant woman, forty years of age, was led to me, who for six months had been paralyzed in her right arm; moreover for two years she had suffered from various nervous ailments, indicating hysteria. After an attack six months before she became paralyzed in her right arm, and after a second attack she had a contracture in it. The arm was now hanging lax and it could not perform the slightest motion; her wrist and fingers were so much bent inward that the long nails had caused wounds in the hand; the articulations of her fingers were swollen and tender. All attempts to straighten the fingers only produced severe pain and increased contracture. Feeling remained in the arm and the muscles were not atrophied. I hypnotized her within a quarter of an hour. She fell into a deep sleep and

was insensible, and her limbs were completely relaxed. With loud voice I now ordered her to straighten the little finger of her right hand. She complied, but with great difficulty and with signs of pain. Encouraged by this success, I asked her to straighten the ring-finger; she did that also; then the middle finger; this seemed to be more difficult, but she succeeded at last, after which the remaining finger and thumb were easily straightened. Her hand was fully stretched, although it evidently hurt the swollen joints; but she moved her fingers with increasing facility, and the contracture had entirely disappeared. Her arm was still immovable. I then ordered the invalid to move her arm and assured her that she could do it; she succeeded, at first with difficulty, but finally so that she moved it as easily as the left one. The bystanders regarded the cure as a miracle. Four months later, I received the information that the woman was well and could use her arm for every purpose."

By the same means Voisin also succeeded in curing several mental diseases, such as partial delirium, maniacal exaltation with or without hallucinations, moral disturbances and irresistible impulses to evil actions.

His first patient was Jeanne S,. aged twenty-two, an hysterical woman suffering from maniacal attacks, hallucinations of hearing and delirium. Although it sometimes took him two hours to hypnotize her, by making her stare at her index-finger, which was held above the root of her nose, yet he always succeeded in cutting short the most violent maniacal attacks; and by suggestion he usually decided that her sleep should last ten or twelve hours—once even twenty-three hours. As, however, she again proved vicious during her wakeful state, he began to try to influence her character and morals by suggestion during the sleep, and in this manner he succeeded in changing these so that she grew not only healthy but virtuous, and afterwards became an excellent nurse. Thus in this case hypnotism was both a remedy and a means of moral improvement.

The second case was that of a hystero-epileptic girl, twenty-five years old, who for five years had had frequent and violent maniacal attacks, with hallucinations and dilirium. She was hypnotized during the attacks, but with great difficulty, as five nurses had to hold her and her eyelids had to be forced upon to compel her to stare at the magnesium light. In the beginning it took one or two hours to put her to sleep. Suggestion decided how long she should sleep—usually twenty-three hours and a half. Thus during the attacks she was kept unconscious for seven days and nights, except for half an hour each day; for toward the end of the half-hour she again began to become maniacal. While she had always before refused to take medicine or food during the attacks, she now willingly took these during the hypnosis. Towards the end of the treatment, which lasted four months, she was kept asleep

only three fourths of the time. After awhile the attacks ceased entirely, and did not return during the fifteen months that have since elapsed, and the woman became "polite, sociable," and even "amiable," and got a position at La Salpêtrière as laundress.

The third case was that of a girl twenty-five years old, with erotomania and maniacal attacks with hallucinations of sight and hearing concerning an imaginary lover. These hallucinations ceased almost immediately after the first hypnosis, during which she was forbidden to see or hear the lover any more, and she soon became entirely well.

The fourth patient was a seamstress, seventeen years of age, who had lost her step-father. She fell into deep melancholy, refused her food and had hallucinations in which she heard and saw her deceased step-father. By suggestion under hypnosis she was soon cured.

The fifth case was a hysterical married woman, twenty-five years old, with visual hallucinations, ideas of poisoning, hemi-anæsthesia and color-blindness of the left eye. She was relieved of all these symptoms and became well through suggestion under hypnosis.

The sixth case, a woman forty-eight years of age, with severe melancholy, hallucinations of sight and hearing and suicidal tendency, was cured in the same way in three séances.

All these cases were treated at La Salpêtrière, and the results were corroborated by the assistant physicians.

Voisin has many times used the same treatment in his private practice and with equal success. One of his patients was a married woman, twenty-five years old, reduced to a skeleton, with melancholy of eight years standing, the greatest distaste for food, offensive breath and pains in the stomach. By suggestion she was compelled to eat, first during the sleep, then also during the wakeful state. The pains disappeared, she gained flesh, and was soon cured in body and mind. Another woman with mania was in this way made not only to eat but also to become mild and kind to her husband.

Voisin mentions several prominent physicians who have had equally favorable experiences of the practical value of the new method, such as Séglas, Lombroso, Grasset and Dufour. Although the method is said to require very patient and varied application, yet the result is so rapid and radical that no physician should hesitate to try it in the treatment of the mentally diseased. After the hypnotic sleep has once been successfully produced (which however is generally difficult when the mentally deranged are concerned) therapeutic suggestion should be used after the first or second séance, as it is a necessary adjunct of the hypnosis. You gently affect one hallucination at a time, without trying to gain too much all at once—which might confuse. The suggestions are given loudly, with precision and imposing authority. The patient is assured that a certain voice, vision or fixed idea will soon disappear. Strangely enough, persons seem blindly to believe and to obey what is

thus impressed upon their conception during the somnambulic state. Doubt and objection are then asleep.

According to Voisin's experience, mental diseases of many years' standing have thus been cured in two or three séances. Hysterical persons have proved most susceptible to the method, but he has also succeeded with epileptics, dipsomaniacs and others mentally diseased. Finally Voisin exclaims: "It would be fortunate for the mentally diseased, if they were all susceptible to hypnotism."

Besides hysterical paralysis, contractures, convulsions, anæsthesiæ, hyperæsthesiæ and other nervous ailments which are always the most encouraging objects for this method of treatment, tonic spasm, chorea, writer's cramp, and other allied diseases have also been successfully treated; the genuine epilepsy, however, seems to defy this as well as all other means. The method is very effective against insomnia. By this means, the bad habit in children of wetting the bed in their sleep has been entirely cured by Liébault in a number of cases. Among other disorders of the urinary canals success has especially crowned the treatment of obstinate spasmodical strictures. Disorders of digestion have been cured by improving the appetite, by checking the pains in the stomach during digestion and by promoting the evacuations by means of suggestions. Disorders of menstruation have been relieved and the menses have been restored after a long absence.

Among the most important diseases which have been the objects of the hypnotizers' successful experiments, may be mentioned alcoholism and the morbid thirst or dipsomania, which borders on insanity. Here, too, Voisin has rendered distinguished service. But Fontan and Ségard also speak of successful cures. The following are instances from the last-named.

T., a smith, thirty years old, was admitted to the hospital of Toulon on account of gastro-enteritis and *delirium tremens*. His appearance was that of a drunkard: red face; red and sore eyes; general tremor; he suffered from insomnia with terrible nightmares; hallucinations of hearing even in the day-time; no appetite; thick-coated tongue; constipation after previous diarrhœic evacuations; had had three attacks of delirium during the previous days; was gloomy and uneasy; speech incoherent; was cared for in an isolated room. The first attempt to hypnotize him failed; by the example of another patient he was afterwards successfully put to sleep. Suggestion on the thirty-first of August: "No delirium; no nightmare: sound sleep; three or four evacuations to-morrow." Upon awaking he was somewhat dazed but remembered the suggestion. During the night he slept well, without dreams—something very unusual—and later in the day he had two evacuations. Suggestion Sept. 1st: "You will have no more tremor; you will have neither dizziness, nor delirium, nor fear; sleep without dreams; better appetite."

Sept. 4. Since the first suggestion he had suffered neither from sleeplessness nor from night-mare or hallucinations. He was contented, ate a great deal, and had five or six diarrhœic evacuations every day. Suggestion "T. should have only two operations a day."

Sept. 16. Quiet as before; no diarrhœa since the last suggestion.

Sept. 21. Bad dreams and diarrhœa had reappeared; otherwise all right. Suggestion: "T. must not dream or be frightened; the nights should be calm; only one good evacuation a day."

Sept. 24. Again some uneasiness after three days and nights of perfect quiet. Suspicion that he had procured some liquor. Suggestion: "No uneasiness. Sleep every night for ten hours without fear and without dreams; absolutely forbidden to taste liquor." Upon awaking he showed great fear of drinking.

Sept. 28. Since the last séance no disturbance, no feeling of sickness. The nights excellent; the appetite good; the general condition very satisfactory. Digestion normal. Before his dismissal, he was given one more suggestion, to keep away from strong liquors. He took an oath to do so. The physician, however, did not put much faith in his word and has not heard anything of him since.

The following is another and similar case.

Joseph B., twenty-eight years old, admitted on account of bloody expectoration; had on Sept. 4, an attack of *delirium tremens*, with strong idea of being pursued. On the fifteenth of September, this idea still continued besides sleeplessness, nightmare, loss of appetite, debility and general tremor. He was then quite easily hypnotized. Suggestion: "Steady walk; no tremor in the hands; better strength." Upon awakening, much less tremor. The dynamometer, which before the sleep showed a strength of thirty-two kilogr. in the right hand and twenty-six kilogr. in the left, showed after the wakening thirty-eight and thirty-one kilogr., respectively.

Sept. 17. The tremor diminished; the legs stronger; still nightmare and loss of appetite. Suggestion: "No headache, no nightmare; strength in the hands; good appetite." The dynamometer showed respectively forty-eight and thirty-five kilogr.

Sept. 20. Since the last suggestion no more nightmare. Sleep and appetite returned. The legs and hands trembled no more.

Sept. 23. Dismissed after the suggestion to keep sober.

The third case, from the same author.

Louis J., laborer, forty-eight years old, admitted on Sept. 18, 1886, for "hallucination of persecution of three months' standing; dangerous to himself and his family." For many years an alcoholic with sallow face and dull eyes; murmured some incoherent words—among others "very tired;" considerable tremor of hands and tongue; poor appetite; vomiting mornings; sleeplessness; hallucinations day and night; usually he saw frightful animals.

Sept. 20. He had screamed during two whole nights and pounded on the door, because he had heard voices threatening to kill him. An effort to put him to sleep by hypnotism, succeeded better than was expected. Suggestion: "The tremor in the hands will cease; no more hallucinations; no terrifying visions, either at night or in the day; to-night you will sleep for eight hours without dreams."

Sept. 23. Since the suggestion considerable improvement. He talked sensibly, had no hallucinations during the day, but was disturbed by night-mare the night before; general tremor remaining in his hands, which had been tremulous for twenty years; difficulty in writing. Suggestion: "Good appetite; no hallucinations, either night or day; good sleep; no more any tremor."

Upon awaking, he wrote considerably better.

Sept. 24. Quiet during the day; better appetite; no hallucination; a better night; his sleep less uneasy; some dreams. Suggestion the same as yesterday.

His writing had gained still more steadiness.

Sept. 25. Felt well; no dreams.

Sept. 29. J. declared himself well; only a slight tremor remained in his hands, not to be compared with the former trembling. He was dismissed after still another suggestion.

This man, who did not suffer from temporary *delirium tremens* but from chronic alcoholism with confirmed ideas of persecution was thus cured by a few suggestions.

It is well enough to be able in this manner to relieve by hypnotism and suggestion such diseases as are sequels of drunkenness: but this method would be still more valuable if it could stop the drinking itself, and the *craving* for strong liquors. On this point also we have some very valuable researches and experiments, especially those of A. Voisin, the distinguished physician and psychiater. In *Revue de l'Hypnotisme*, Aug. and Sept. 1887, he published four cases of morbid craving for drink, or dipsomania, which were cured by this process.

The first case was made public in the congress at Grenoble 1885. It was that of a man of Rouen, thirty-five years old, who had had regular attacks of dipsomania twice a month for ten years, each time for ten consecutive days—thus no long intervals of sobriety. Even at the first séance, V. succeeded in hypnotizing him, and by suggestions during the sleep, in two days he succeeded in curing him so radically that no attack appeared during the two following years—a really brilliant result in a disease which usually defies the most energetic and long-continued treatment.

We know that this terrible disease (dipsomania), which is usually combined with a feeble constitution and with a nervous temperament, also attacks women, and not seldom—at least in France and England

—those of the higher classes. Not long ago V. also tried his method on women.

On the twenty-seventh of March in 1887, he was called to Mrs. X., forty-two years old, who, for four or five years at every menstruation, had an irresistible craving for drink, which she satisfied by drinking five or six litres of wine daily—besides brandy—so that she caused scandal in her noble family. She had grown sallow and thin, with dull eyes and a careless and indifferent expression. She was exceedingly irritable, disputed with the whole family and made disagreeable scenes. She had a continual headache. She either did not sleep at all or else very uneasily, being disturbed by dreams and nightmares, which persecuted her even during the day. Her breath was redolent of alcohol and she had a constant thirst, which she was incessantly trying to quench.

On the twenty-ninth of March, V. began with the hypnotic treatment. By applying his left hand to her head he produced a desire for sleep. Afterwards she had an intense ache across her head. On the thirty-first of March, she was hypnotized by staring at the stopper of a bottle, and then received the suggestion that she would not have any headache; that she would sleep well during the night, without any nightmare, and that she would awake when V. put his finger on her right ear. And in this way she was awakened after half an hour.

On the second of April she told V. that she had slept well since the last time he saw her, and that she had not been tormented by any nightmare or headache. She was hypnotized and "suggested" to have no more thirst between meals, and not to take more than half a bottle of wine at each meal; furthermore, never to drink any brandy or *liqueurs*. A few days later her husband said that his wife was more quiet, that she had no more bursts of impatience, nor showed any signs of drunkenness. The same treatment was repeated a few more times. Her physical health was soon restored; her breath grew sweet and free from alcoholic vapors; her eyes became bright and her temper good and even, so that she could again take charge of her house. From the first of May her husband considered her fully cured, and as late as the first of September no relapse had taken place.

The third case was also that of a woman, Mrs. F., thirty-one years old.

On the nineteenth of April, 1887, Voisin was consulted. Her husband complained that for six years she had been plainly intoxicated every eight or ten days, though he had not been able to surprise her in the act of drinking. Now she was in just such a state; with wild looks, alcoholic breath, red lips and cheeks, incoherent speech, reeling gait and trembling hands. But she firmly denied having indulged in liquors. She either had no sleep or was disturbed by horrifying dreams. She had a constant ache and heaviness in the head.

Several modes of treatment had been tried in vain. On the twenty-seventh of April, V. succeeded in hypnotizing her by staring at her eyes and by pressure of his hand on her head. Suggestion: not to drink, except at meals.

On the second of May, her husband returned and said that she had not been drinking since the hypnosis, and that her sleep had been quiet. She was now hypnotized for the second time and received the suggestion not to drink brandy, *liqueurs*, or anything between meals, and not to have any thirst except at meals.

May 9th. She had not shown any sign of drunkenness; her sleep had been quiet and her temper good, and she now worked industriously. Her cheeks were no longer flushed nor was her breath alcoholic. Her appearance was now smiling and amiable, and she thanked V. for having cured her.

On the first of September, her husband declared, that his wife was now like herself—as she had been seven or eight years before.

The fourth case was still more difficult, but the success was all the more brilliant. This patient was also a woman, forty-five years old. For twelve years a widow, she had tried to drown her sorrow in the cup. Especially during the last seven years, she had been in the habit of getting thoroughly intoxicated with wine or brandy several times a month. Her temper had become abominable; she had constant scenes and quarrels with her children; she did not care for her home; she had constant thirst, and said she would drink till she became insane. She did not sleep any more, had the most horrible hallucinations, had to be watched at night, wished to smash everything, also had suicidal tendency; for several days had refused to leave her bed and had had slimy vomits. She detested everything that she had loved before: both her children, God and religion.

Only with difficulty was she persuaded to receive V. on the eighteenth of July, 1887. She turned her back to him, did not wish to see any physician, vomited and complained of pain in the pit of her stomach and of extreme thirst; she asked for wine. First, ordinary means were prescribed to alleviate the vomiting. These succeeded. On the twenty-second and twenty-third of July, V. tried in vain to hypnotize her. The third attempt, on the twenty-fourth, was successful. Although she gave no sign that she heard anything, she was given the following suggestion: "No thirst, except at meals: not to drink between these; at the meals only two glasses of diluted claret: to shun undiluted wine, brandy and *liqueurs*. This is the way to regain your health and happiness."

July 25th. She had not felt any more thirst except at meals. She was quiet and had not attempted to drink either wine or cordials. She was then hypnotized more profoundly than on the previous day. To the former suggestions was added: To sleep for six hours during the night—from eleven to five.

July 26th. Her sleep lasted exactly the prescribed time. She was calm and did not vomit any more; the pain in the pit of her stomach was gone, but she still had a headache. Lethargic hypnosis; the same suggestions with the addition: No nightmare, no headache.

Aug. 2nd. Everything satisfactory except her headache, which remained in the daytime. At the request of her brother, she was then given the suggestion to occupy herself with her household duties and with her children; to regain a quiet temper; to go to church and thank God for health regained, etc.; to thank her brother for his sacrifices for her sake; to no more have any thirst, headache, sleeplessness or nightmare.

On Aug. 4, she met V. with the most cheerful countenance, said that she had been to church, and thanked V. with emotion. Her brother said that she had begun to take care of her house, was on good terms with her children, slept well, but had some headache. But her hand still trembled, so that she could not write a testimonial needed by her son. She was then easily hypnotized, and V. again gave her the usual suggestions, adding that she would without difficulty write him a letter of thanks. The next day she wrote the testimonial without trembling. On the seventh of August she wrote the following letter to Voisin.

"You had saved my life! You have succeeded in suppressing that thirst, which consumed me, and which was my misfortune. You have given back to me the quiet sleep I had missed for so long. You have restored me to a happy existence, which was crushed by sorrow and suffering. You have awakened anew in me my old religious feelings; my temper is again good and mild; you have restored me to the normal condition in which I should have been, had I not lost my husband, and had I not been sick for so long. At mass, I shall pray for you and yours. A thousand times thanks! Receive, sir"—etc.

On the twenty-first of August Mrs. X. went into the country with her children, well and normal in mind and body.

Voisin thinks that these successful experiments open a new field for the employment of suggestion in overcoming various bad habits and vices which cause diseases, sorrow and unhappiness to mankind.

At the second international congress against the abuse of alcoholic liquors, opened in Zurich on the ninth of September 1887, both Ladame, of Geneva, and the eminent psychiater Forel reported several cases of dipsomania, which they had cured by means of hypnotic suggestion. Forel has also had decided success with this means in the treatment of mental diseases. I myself have under treatment a young man suffering from insomnia, with strong hallucinations of hearing. After a few suggestions a very decided improvement has taken place.

Thus hypnotic suggestion affects not only physical sufferings and

bodily diseases, but also the psychical life, so that bad habits can be suppressed and a depraved character can be improved and changed; in other words, this means can be used to restore both the psychical and the physical life to the paths of righteousness and health.

CHAPTER X.

HYPNOTISM AS A MEANS OF EDUCATION, OR AS A MORAL REMEDY.

IN 1860 Dr. Durand wrote: "Braidism provides us with the basis of an intellectual and moral *orthopædia** which will certainly some day be introduced into schools and penal institutions." But it is principally the school of Nancy which of late years has studied the influence of hypnotism on the character, or its moral and pedagogical significance; and Liébault, in particular, has studied this phase of the subject for several years, and in many cases has observed such an influence both on the young and the middle-aged, especially the former. Public attention was further attracted to this question by Dr. Bérillon's report at the congress of Nancy, in August 1886, before the pedagogical delegates, who received the subject with such interest, that their honorary president, Hement, declared it to be the opinion of the body, that recourse should be had to hypnotism in those cases where the pedagogue acknowledges his complete inability, and that this idea ought to become a starting-point for a real *moral orthopædia.*

Liébault has acquired the greatest experience concerning the value of hypnotism in this respect; he claims to have tried the method in several thousand cases, always with some good effect and never causing any harm. A big and strong boy, who was exceedingly lazy and negligent, and who constantly stood at the foot of his class, was so changed by only one hypnotic séance, that he soon took the first place. A young idiot, who had been unable to learn either to write or to count, and who had been listless during the instruction, became by oft repeated hypnotizing so attentive and diligent, that in two months he had learned the alphabet and the four fundamental rules of arithmetic.

Bernheim states that all children are susceptible to suggestion. Usually it is only necessary to keep their eyes closed for a few seconds or minutes, and to assure them that they will go to sleep or that they already are asleep. But even when awake, they are susceptible in a measure. From his own experiments Bérillon gives the following practical rules. If you have to deal with stupid, moderately gifted or lazy children, you can confine yourself to a verbal suggestion, without hypnotizing them. You inspire the child with the greatest confidence, isolate it, put your hand on its forehead and make the suggestions you

*Greek, *orthos*, right; *paidia*, instruction.

desire, with gentleness, precision and patience. If you have more obstinate, deeply depraved or vicious children, the suggestion has better effect during hypnotic sleep. By repeated séances you will succeed, even in difficult cases, in correcting bad instincts and in making the children good, virtuous and attentive. Hypnotic suggestion, guided by an experienced physician, should be tried in all such cases, at least where other educational attemps have failed.

A professor of philosophy—Blum—brings against the method the objection that it seems to suppress the individual moral liberty; that it transforms man into a machine, and that it may be misused so as to inspire the children with bad instincts. Also juris consult Desjardins has raised similar objections and spoken of a "moral slavery." It would seem, however, as if the liberty of children to do evil or to develop in a bad direction were one which does not deserve to be defended.

Furthermore Bérillon calls attention to the power of example on children, both for good and for evil, and also that that which works through the example is suggestion in the proper sense of the word, viz.—a self-suggestion in the child, when it imitates others. As we have already shown, all authority—therefore the teacher's or educator's —acts on the child by a kind of suggestion, and in all ages this has been more or less consciously used by pedagogues. Feuchtersleben, especially, in his "Hygiène de l'Ame," strongly advises that you should try to develop children's gifts, by making them believe that they already have a certain ability in the direction of what you wish to develop.

In more difficult cases, however, this simple form of suggestion does not suffice, but recourse should be had to hypnotic suggestion, of which Bérillon gives another striking example in the following case.

Already as a babe in arms, the boy Emil P., now eleven years old, had acquired the habit of continually holding the second and third fingers of his left hand in his mouth up to the middle of the second phalanx. Ever since then, and especially evenings, he was in the habit of sucking his fingers and he could not go to sleep without holding them in his mouth. He also did it in the daytime, when he was not obliged to use both hands for something. In order to overcome this very bad habit, everything had been tried—entreaties, threats, castigation and other forcible means, but nothing helped. Constant disorders of the digestion were caused by his ugly habit of putting his often dirty fingers in his mouth. His nails were bitten off and his fingers were covered with thick swellings, when B. was consulted. He hypnotized the boy in a few minutes by letting him stare at a brilliant object and by suggesting sleep. By verbal suggestion he then ordered him to go to sleep of his own accord in the evenings without putting his fingers into his mouth. This suggestion was repeated three times, while the

boy was asleep for five minutes. Awakened, he declared that he certainly had heard B. speak, but that he had been completely dazed and without will and that he did not remember what B. said. On the next day his parents declared that on the previous evening to their great astonishment, the boy had gone to sleep without putting his fingers into his mouth. During the day he sometimes had the temptation, but resisted. To his grandmother he made the following confession: "It is strange that every moment I have a desire to put my fingers in my mouth, *but I feel that I cannot do it.*"

He was then hypnotized for the second time—more easily and more profoundly than before—and the same suggestion was twice repeated in a loud voice. When he was awakened after a few minutes, he knew nothing of what had passed. Since then he has not once yielded to his old temptation; his sleep has been quiet and sounder than before; his stomach has been cured and he has enjoyed good health.

Thus a confirmed habit of many years' standing, which had resisted all other treatment, was overcame by even the first hypnotic suggestion.

In some of the above descriptions we have proof of how suggestion, even in adult persons, changes the character and removes bad habits. Thus the significance of suggestion, as a moral educator for both young and old, is sufficiently proved to give a well-founded hope that in it, mankind has gained one of the most powerful means not only of physical but also of moral improvement.

CHAPTER XI.

HYPNOTISM AND THE LAW.

HYPNOTISM comes in contact with the law at more than one point, and many and intricate are the medico-legal questions which it has already raised. The most important of these questions are:

1. Can the hypnotized be physically or mentally injured by hypnotism?

2. Can the hypnotized fall victim to crime?

3. Can the hypnotized be used in the service of crime as a ready tool without a will?

4. Are the hypnotized responsible?

5. Should hypnotism be prohibited?

To these main questions we will try to give answers, and at the same time will cite explanatory examples.

1. *Can one hypnotized be physically or mentally injured by hypnotism?*

By hypnotism a natural, normal sleep is not produced in a person, but a sleep-like nervous condition, which must be considered rather as a pathological than as a physiological state; rather as a morbid and abnormal than as a healthy and normal condition; in many cases indeed it is more like mental disease than physical health and sound mind. But all morbid, artificially-produced conditions of the nervous system, even if they are soon changed, must cause an over-irritation and weakening of the system, and this in a greater degree the oftener the experiments are repeated. Experience also teaches that nervously weak persons are usually more easily hypnotized, and that the oftener the hypnosis is repeated, the sooner and more easily does it appear in the same individual, because the nervous system grows more sensitive, more irritable and weaker. This weakness may go so far, that hypnosis takes place from the slightest cause, even against one's will, as we have seen in the case of the subject who became cataleptic by merely staring at her reflected image in a mirror. Also an involuntary somnambulistic state can easily arise in one who has often been hypnotized; and of course during that state the subject cannot freely control his mind or actions. Several cases are on record, where the subjects of professional magnetizers, after only one or two experiments, have become sick and debilitated—and even melancholic and mentally deranged. It is true that hypnotism provides the means by which a cure can often be effected where harm has been done, viz. suggestion; but for all that, prudence insists on a careful handling of a power which can so thoroughly control both the physical and mental life.

We have previously shown how this means can be advantageously used for the improvement of man's character—as a powerful means of moral education. But whether the effect shall be good or bad rests entirely with the operator, and in the hands of an unscrupulous hypnotizer is as likely to be misused as not; for no one is so easily led as a hypnotized subject, and the bad instincts and impulses can be awakened as easily as the noble ones. Bailly's report in 1784 pointed out how easily passions could be awakened by the close contact between the magnetizer and his female subject, especially by the passes then in use and other methods altogether too familiar. Hence it is of the greatest importance that hypnotism be praticed only by honorable, conscientious and pure-minded physicians, who do not misuse the great influence and sympathy which they gain over their patients by this means.

But the hypnotized can be injured not only by the weakening effect of the hypnosis on the nervous system, but also by suggestions of such a kind that with or without the operator's intention they cause injurious and even fatal effects. Even in those not hypnotized imagination can be so strong that they may be frightened to disease or death. The story is told of a young girl, sixteen years of age, who was nearly frightened

to death by the joke of a kinsman, merely by his making her believe that she had taken a strong poison instead of a harmless drug. All the symptoms of poisoning were fully developed, when at the last minute she was informed of the joke and was saved.

Quite recently a medico-legal examination was made of a woman who was supposed to have shortened her life by poison. The investigation brought to light the fact that she had taken perfectly harmless insect-powder, in the belief that it was a deadly poison, and as no other cause of death was found, it must be supposed that her imagination as to the efficiency of the powder had caused her death.

With the consent of Napoleon III., a scientist had a criminal tied to a table, with his eyes blindfolded, under the pretext that he was going to open the man's carotid artery and let him bleed to death. With a needle he made a slight scratch on the criminal's neck and had water dropping into a vessel that stood underneath, while all around an awful silence prevailed. The victim, believing that he heard his life-blood flowing away, really died after six minutes.

A horrible joke by some Scotch students produced the same result.

A disagreeable janitor was one night lured into a room, where he was solemnly tried and sentenced to death by decapitation. The terrified man was led into a corner and placed on a block beside which stood a sharp axe; after his eyes had been blindfolded, he was given a blow on the neck with a wet towel, and when they lifted him up, he was dead.

If such things can take place with waking persons, how much more easily might it not then be done with hypnotized and "suggested" ones.

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2. *Can the hypnotized fall victims to crime?*

The unconsciousness and loss of will, which are so easily caused in the hypnotized, can, of course, with the greatest facility be misused for immoral and criminal purposes. Rape, murder, robbery, theft, abduction, etc. are then easy to accomplish. In the beginning of this century, the people of India knew that the easiest way to steal children and carry them away was to magnetize them. Such thieves were known in India under the name, *thugs* or *bheels*, and in 1820, a band was discovered whose members, in the course of twenty years, had stolen millions of children. A child recovered at that time was entirely stupid and did not recognize her father until she had been de-hypnotized by the ceremonies of the Buddhist priests.

In 1845, a case of this kind was minutely described by Esdaile.

In France some remarkable medico-legal cases have occurred with reference to crime against morality under hypnosis, one of them combined with abduction; but we do not consider it proper to quote here

any details of these horrible and shocking occurrences, which we hope will stand alone in the history of misused hypnotism.

Besides by robbery and theft the hypnotized might easily be deprived of their property in a more delicate manner, so that it would look as if they voluntarily gave it away, if only a powerful suggestion were given in that direction. In this respect Liègeois has made very instructive experiments.

For instance, he said to Miss E., who was very susceptible to suggestions even without being hypnotized and in an apparently normal state:—"You know that I have loaned you five hundred francs; you must give me a note for that sum."—"But I do not owe you anything; you have not loaned me anything."—"You have a poor memory, madam; I will remind you of all the circumstances of the loan. Yesterday you asked me for this sum and I gave you a roll of twenty-franc pieces."—Under the influence of his honest expression and decided assertion, she began to hesitate and her thoughts became confused; she searched her memory; finally it obeyed his suggestion and showed her the matter as he had stated it; she acknowledged her debt and wrote a formal note for five hundred francs. As she was of age the note was perfectly valid before the law. Her mother was greatly astonished when she saw the note, and said to her daughter: "You have not told me anything about this loan; where have you spent the money."—Somewhat embarrassed she looked at Liègeois.—"It is very simple; you have deposited it in the savings-bank."—She acknowledged this as entirely correct.

M. Liègeois, who is Professor of Jurisprudence at Nancy, seems to have a special gift for making women believe that they owe him money, and he does not even need to hypnotize them in order to convince them of it. The following cases were reported in 1884 before *the Académie des Sciences Morales et Politiques.*

"Mrs. O. is a young and very intelligent lady; she has received an excellent education; at first she energetically resisted all suggestion, but gradually yielded. I made her believe that she owed me one thousand francs and asked for her note. She obstinately refused to give it, and declared that she owed me nothing and that she would never acknowledge any debt to me. I insisted. She began to hesitate; she remembered it, acknowledged it before several witnesses, and wrote the note."

On another occasion, when she seemed fully normal, he told the same lady in the presence of her husband and several other witnesses, that she had promised to pay him, on account of her husband's indebtedness to him, one hundred thousand francs. At first she denied that such a thing had ever been mentioned; afterward she searched her memory, finally found that he was right, and wrote a bond for the sum named.

In the same way the hypnotizer can abuse his influence over the sleeper, by compelling him to make out donations or to make his will in the other's favor, and even to take upon himself the worst fictitious crimes.

This is an experiment in that direction by Liègeois.

He made Miss E., who was apparently in a wakeful and normal state, believes that she had killed one of her friends, introduced her to the justice of the peace, who was present, and told her that the questions the latter was going to ask her were entirely serious and that her welfare depended on her answers. "Why have you killed your friend?"—"I was angry with her on account of a dispute."—"With what instrument did you commit the murder?"—"With a knife."—"Where is the body of the victim?"—"At her home."—"You know what penalty befalls you for such a crime?"—"Yes, perfectly; but that makes no difference to me."

There would even be no difficulty in making away with an enemy or objectionable person, in a manner which would not betray the originator of the crime. It is only necessary to hypnotize the victim and to give him the suggestion that he will commit suicide. With the strongest possible love of life he will have great difficulty in resisting such a suggestion.

There is still another way in which the hypnotized can be injured, viz.—by drawing forth under hypnosis confessions and secrets which they would not voluntarily disclose when awake. Of course this may not succeed with all somnambulists, for some are very cautious and reserved and some may even play the hypocrite, and lie and deceive their hypnotizer. But the great majority will prove very frank and outspoken, and during the sleep may much too easily hurt themselves or others by revealing secrets which ought to be kept.

Hence the answer to the second question would be, that the hypnotized may fall hopless victims to the most criminal and harmful actions of all kinds, not only while they are asleep, but also after they have been awakened, and certain sensitive individuals even without being hypnotized. There lies such an infernal power in the hands of the hypnotizer that every one ought to be strictly forbidden to meddle with hypnotism, except those who assume the responsibilities of a physician and who have the people's welfare and woe in their hands.

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3. *Can one hypnotized be used in the service of crime as a ready tool without a will?*

From the cases already mentioned it plainly follows that the hypnotized can by all kinds of suggestions be made not only to harm themselves but also others, and that they may even be irresistibly driven to any crime. It is chiefly in this that the darkest side and the worst dangers of hypnotism are found.

Also of this Liègeois and others have reported some striking experimental proofs. For instance L. made the above-mentioned Miss E. fire a pistol at her own mother, thinking it was loaded.

A young man, twenty-five years old, in whom L. could at pleasure produce catalepsy, anæsthesis, illusions of taste, and positive and negative hullucinations, even without hypnotizing him, was once presented by L. with a white powder, and told that it contained arsenic. "You will immediately go to your aunt's; there you will take a glass of water, pour the arsenic into it, dissolve it well in the water and offer the poisoned drink to your aunt."—"Very well."—In the evening L. was imformed that the attempt at poisoning had been punctually performed.

On another occasion, L. chose at random from a party of five or six somnambulists, who met at Liébault's, a Mrs. G., took a revolver and some cartridges, went out into the garden, loaded only one of the chambers, fired it against a piece of pasteboard and returned showing the hole from the bullet. In less than fifteen seconds, he suggested to Mrs. G. to kill with the revolver a Mr. P., an old magistrate, who was present. Without hesitation Mrs. G. fired a shot (from the unloaded pistol, of course) at Mr. P. Immediately questioned by the police inspector, who was in the room, she acknowledged her crime with the utmost indifference. She had killed P. because he did not please her. They might just as well arrest her; she knew very well what punishment she would get; if they took her life, she would go to the other world, like her victim, whom she saw stretched out before her, bathed in his own blood. She was asked if she had not received the idea of murder from Liébault.—No, she had done it from her own impulse; she alone was guilty; she was resigned to her fate; she would submit to the consequences of her crime without complaining.

L. said to Mrs. C.: "There is Mr. D.; he is thirsty; give him this solution which contains arsenic."—She offered him the glass. Quite unexpectedly he asked: "What does this contain?"—She answered frankly: it is arsenic." (For she was not forbidden to mention this.) New suggestion: "If you are asked, you will answer that it is sugar and water."—At the repeated question she answered: "It is sugar and water." D. emptied the glass.

Finally, we will quote a case which has been reproduced in many French journals, the last time in 1886, in the July number of the then new periodical *Revue de l'Hypnotisme*. The idea of this experiment was borrowed from Jules Clareties' novel, *Jean Mornas*.

Under deep hypnosis the girl X. was ordered to sneak into Mr. F.'s house the next day at a certain hour, and, with precautions not to be discovered, to steal a bracelet, which was lying in a wardrobe at a place minutely described, and to carry it cautiously home to the magnetizer, so that no one would notice that he was in the plot. Under no considerations was she allowed to denounce or betray him. The theft was

punctually executed on the following day, with the greatest cunning and caution, and the trinket was delivered. The same evening, the girl was again hypnotized by the Mr. F. who owned the bracelet, who was also a magnetizer and in the conspiracy with the first one; during the hypnosis the following conversation occurred:

"I have been robbed of a bracelet to-day; you know who the thief is."—"How can I know that?"—"You cannot be ignorant of it!"—"Why so?"—"Because I am sure you know the thief; tell his name!"—"I cannot."—"But I desire it!"—"And I say that I cannot."—"You know that you have no will here; there is only one—mine; obey!"—(After a silent resistance and evidently with effort) "Well, it is I!"—"That cannot be possible!"—"Yes, it is I!"—"You are not capable of such an action. Then you must have been forced to do it?"—"No!"—"You certainly have not done this of your own accord."—"Yes."—"I do not believe you."—"Well, it was not I."—"Who, then?"—"I will not tell you!"—"But I demand it."—"Never!"—"I command you to tell it!"—"That makes no difference! I shall sooner yield up my life. I am sorry, for you have always been good to me; but I shall never tell it."

Further attempts to induce her to confess failed through her obstinacy, which however would probably have been broken, if he had persisted long enough. But he proceeded to another experiment during the same hypnosis.

"I seek revenge on somebody; will you help me?"—"Willingly!"—"You know that Mr. Z." (the first one who magnetized the girl) "is my enemy."—"I should think so!"—"Then you must denounce him. As soon as you have awaked, you will write to the justice of the peace, that you have here been accused of stealing a bracelet, but that you are innocent; that Mr. Z. is the guilty one, and that you saw him commit the robbery."—"But this is wrong, as it is I who stole the bracelet."—"Never mind; write this."—"Very well! But if it were not true?"—"But it is true; for you are much too honest a girl to have stolen. It is not you! Do you hear? It is not you! I say that it is not you!"—(With confidence) "Of course not. It is not I!"—"Mr. Z. is the thief; you have seen him!"—(Energetically) "Yes, I saw him; it is he!"—"You will write to the justice of the peace."—"Yes, immediately; I must denounce him."

Immediately after her awaking, fully convinced of the correctness of the accusation, she wrote and sealed a letter to the justice of the peace, put a stamp on it, and was just going to mail it, when she was was again hypnotized, in order to prevent this. The letter read as follows:

"To the Justice of the Peace:

"I accomplish a duty. This morning at one o'clock, a bracelet was stolen from Mr. F. For a moment I was accused of it, but

unjustly; I swear to it; for I am entirely innocent. The thief—I must mention it, because I saw it all—is Mr. Z. (his full name given). It was done as follows: he sneaked into F.'s parlor at one o'clock; he went through the small entrance on du Four street and he stole one of Mrs. F.'s bracelets, which was lying in a wardrobe near the window—I saw it. Then he put it into his pocket and went away. I swear that it is as I have stated. He alone is the thief and I am ready to testify to this before the court. N. N.

The letter was not dictated, but composed by the girl herself. When she awoke, she had forgotten the whole story; but nothing would have been easier than to order her during her sleep to appear on a certain day and hour—even long afterwards—before a court, and to swear to whatever she had been ordered to testify.

Bottey tells of the following case of suggested theft.

He said to the hypnotized Miss S. R.: "At about four o'clock to-day, you will see a gold watch on a table, and you will not be able to resist the temptation of stealing it." At the appointed hour—about seven hours after the hypnosis—B. saw her going to the table, on which he had placed the gold watch. She took it, looked at it, put it back, and repeated these actions several times; finally, after a long internal struggle, she quickly took the watch and put it in her pocket, while she looked around to see if she was detected. Afterwards, when he asked her to return the watch, she showed such mortification on account of her involuntary offence that B. was obliged by suggestion to remove her remembrance of this event.

By suggestion persons can also be made to commit perjury or to bear false witness; and this can be done in various ways; either so that they make an entirely false statement of occurrences which they have really witnessed, or so that they are by retroactive suggestion, so-called, made to believe that they have witnessed occurrences which in reality never took place; or finally, so that they are by suggestive amnesia completely robbed of all memory of what they have experienced.

Thus Bottey, for instance, gave the following suggestive communication to S. during s somnambulistic state: "Three days ago, at 11 P. M., you called on the noted Mr. C. When you arrived at his door, you heard loud quarreling; through the glass door you saw Mr. C. disputing with a lady dressed in furs and wearing a hat with red feathers. You saw C., in a fit of anger, take a dagger out of his pocket and thrust it into the lady's breast. Because you have seen this crime, you must denounce him before the court. When you awake you will remember what I have now told you, and you will make the accusation in writing and ask me to give it to the *procureur*." And that took place: the same day a letter was given to B. for the *procureur*, relating the crime in all its details, the lady's dress not forgotton.

In the same way B. convinced another woman that she had seen a certain gentleman poison an old lady with opium, and when she awoke, she hastened to make the accusation at the proper place. Bottey has also suggested suicide and murder to several. Concerning these he has made the observation that if they were to be performed immediately after awaking, they were done more easily and without hesitation. If on the other hand they were not to be performed until several hours or days afterwards, a hard struggle was usually noticed, as also hesitation and resistance against the temptation, to which, however, they almost always finally succumbed.

Once the somnambulist L. was given the order, upon awaking to shoot with a revolver at an imaginary person who would appear before her. The order was punctually executed, and they made a pretence of carrying the corpse out of the room. An hour later Bottey arrived with a friend, who pretended to be a justice of the peace, and who asked why she had killed the innocent person and if possibly B. had not ordered the murder during her sleep. She answered that she was entirely unaware that B. had given her any such order: on the other hand she was convinced that, when she shot at the stranger, she was as if completely mad, and no human power could then have prevented her from committing this crime. But that persons can by positive suggestion be compelled to criminal actions is not all; by negative suggestion they can also be made to neglect their duties and to omit what they ought to do. Thus they can be prevented from writing their name, and even made to forget it, and to forget their duties, etc.; fears have even been expressed, that marriage could in this way be prevented, if, for instance, by suggestion a rival compelled a bride to say nay at the altar.

By the experiments just related and by several similar ones, it has been sufficiently proved that it is possible by hypnotism and suggestion to use others as willing tools for the execution of criminal actions of almost every kind. The danger of this is greatly increased, partly by the fact that the somnambulist, upon awaking, does not remember the contents of the suggestion nor who gave it, while at the same time it is faithfully and irresistibly performed at the appointed hour; partly that there are persons, but fortunately only those who have been hypnotized many times, who, even in an apparently entirely wakeful state are susceptible to hypnotism.

The help a judge could get from the fact that ususally the memory of what has happened during one hypnosis reappears during the next, (whereby he would only need to again hypnotize the delinquent in order to draw the truth from him) can, unfortunately be neutralized by the hypnotizer by suggestive amnesia, or an order to forget all that was said during the hypnosis.

To the credit of humanity all these suggested crimes have as yet

been confined to the harmless sphere of experimenting, and have hardly appeared in real life. But a judge must nevertheless be on his guard. No one knows what may happen.

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4. *Is the one, who acts on account of the suggestion of others, responsible for his actions?*

Those who voluntarily submit to hypnotism are in about the same predicament as those who by alcohol or other narcotic and soporific agents—such as opium, hashish, chloral, chloriform etc.—voluntarily put themselves into a state of bondage, where they cannot with certainty control their judgment or free will.

Though such a person should be considered as perfectly irresponsible as a natural somnambulist for the actions he executes on account of suggestion, yet if he knew of the danger to which he exposed himself in being hypnotized, and if he submitted to it voluntarily, he has fallen into mental derangement by his own actions, and is then responsible—according to Chapter V. § 5 of the Swedish law, which accords impunity only to such a person as "*without any fault of his* has become mentally deranged, so that he does not know what he is doing." But there are also those who can be hypnotized without their knowledge or will, and these must be considered entirely irresponsible. The circumstance before mentioned, that the somnambulists are not so dependent as the cataleptic automatons, but can make resistance, is however so difficult to estimate in each case, that no degree of the somnambulist's responsibility can very well be based on it.

On the other hand it is fully decided that the one most to blame for the suggested crime is the hypnotizer, or the one who has given the suggestion. On him the severest punishment of the law should fall in all its rigor, if he has abused his immense power over his fellow-men.

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5. *Should hypnotism be prohibited?*

Before answering this question, we will cast a rapid glance at the present relation of the law to the practice of magnetism or hypnotism in different countries.

We have already seen how Mesmer, although a regular physician, was driven out of Vienna, and with him his new remedy, magnetism. In spite of his connection with Dr. d'Eslon and many other noble patrons, in Paris also he had great difficulty in getting his new method legalized and the official report of the medical faculty, by Bailly, urged its suppression. In 1784 the chief of the Paris police received orders to put a stop to the scandals of the magnetizers. The Revolution swept away the "harmonic" (magnetic) societies, and not until after the fall of Napoleon did they flourish again; but the public authorities did not care to make regulations for a matter which was declared by all the scientists to lack real solidity. The Paris Academy of Medicine even

questioned whether it would be proper for that body to have animal magnetism investigated. However we know faom Husson's report that the investigation, which lasted for five years, was both thorough and favorable. But even at that time Husson complained that the physicians had neglected to take this process into their own hands, and that instead, they had allowed impostors and secret societies to work mischief.

On the other hand, the question was treated with less prejudice in the northern countries. Figuier relates that the Emperor Alexander of Russia in 1815 ordered a committee to investigate magnetism. The committee declared magnetism to be a very important agency, but that just on that account it should be practiced only by skillful physicians. And to this end the emperor issued an ukase. In 1877, the king of Denmark signed a resolution of the board of health, which allows magnetism in medical practice, but only on the same conditions as in Russia. In the same year a royal decree was (according to Figuier) published in Sweden, which ordered that theses on magnetism would have to be defended for the degree of M. D. (?) We have not as yet found this decree. In the same year (1817), the king of Prussia also signed an order that only licensed physicians would be allowed to practice magnetism, and in the next year the Berlin Academy of Sciences offered a prize of three thousand and three hundred francs for the best treatise on animal magnetism. Although the French government did not take any steps, yet many private scientists came forth to defend magnetism—such as Laplace, Cuvier, Arago, Bertrand, Georget, etc. We have already spoken of Husson's report, which in 1831 was buried in the archives of the Academy of Medicine. A new official report, hostile to Husson and magnetism, was sent in 1837 to the Academy by Dubois (of Amiens), and others. The report was received with acclamation by the Academy. Nevertheless Burdin offered a prize of three thousand francs to any one who should prove that he could read without the aid of the eyes or without light. Pigeaire, a veterinary surgeon of Montpellier had a daughter Léonide, who was said to possess this power. He took her to Paris to gain the offered prize. Her seances succeeded admirably before the public, but as, at the final test, the Academy wished to provide the bandage for her eyes, and P. would not allow any other than the one she had used before, the test did not take place: and it was just as well, as Velpeau had shown that he could also read with her bandage. Another aspirant for Burdin's prize, Mlle. Emilie, was found to have copied beforehand the passages in the book which she afterwards read. A third trial, with M. Teste and his somnambulist, failed completely. That after these exhibitions the Academy should have become still more sceptical towards magnetism, is not to be wondered at. On the other hand it was too hasty a decision that the Academy now made, viz.—forever to desist from all meddling with animal magnetism, in the same

way as the Academy of Sciences had then refused to have anything further to do with squaring of the circle and perpetual motion.

The negligence of the physicians had for result, that magnetism for several decades fell almost exclusively into the hands of impostors and charlatans, and although, during the last decade, the scientists have at last begun to do their duty in cultivating a field which should become fruitful to science and to the health of man, yet it would hardly be believed how many needs still remain, especially in Paris, where there are said to be about five hundred "magnetic cabinets," so-called, where the public is cheated in the most shameful manner by professional magnetizers and somnambulists. A description of this swindle would be of great interest but it is not allowed by the limited space of this work. That legislation should seize upon and check such mischief and abuse is self-evident. Some countries have already set a good example and prohibited at least the public exhibitions of professional magnetizers, Italy, Austria and Switzerland, for instance.

It is our opinion that magnetism or hypnotism, the far-reaching effects of which on both the physicial and psychical life of the human organism cannot nowadays be denied by any cultivated person, should be dealt with the legislature like deadly poisons. None but licensed physicians should be allowed to practice hypnotism. What would be said if tramps were allowed to travel round and show the power of opium, chloroform, or chloral to put persons to sleep; or the power of strychnia to make one's limbs stiff; or the power of alcohol, belladonna, hashish, etc. to produce strange visions and delirium? We are astonished that hypnotizing in public is not already prohibited in all civilized countries where the question of poisons is regulated by law. On the other hand, hypnotism should be freely allowed in the service of medical science. For its proper practice both the physician's knowledge and the moral responsibility of his position are necessary. In the hand of the physician this two-edged sword can become a great blessing, in that of others an unmitigated evil.

CHAPTER XII.

MISUSES AND DANGERS OF HYPNOTISM.

IN the previous chapter we have mentioned several of the abuses and dangers which may appear in the practice of hypnotism. This side of the subject, however, is of such importance and interest, that it deserves a separate chapter.

If, until now, magnetism has not been used so much for entirely criminal purposes, as it might have given occasion for, yet it has in all ages been greatly misused for sordid gain by professional magnetizers,

who have had no other aim than to impose on the curiosity and credulity of the public. Still to-day, and especially in Paris, this imposture flourishes by the side of the scientific investigations on the subject. Gilles de la Tourette, who has taken great pains to force himself into the more or less secret magnetic societies and the cabinets of the somnambulists and to expose their tricks, has, in his recently published work on hypnotism, given an interesting description of circumstances pertaining to this subject, from which we borrow the following.

A "*cabinet somnambule*" in Paris is a real business-house, founded several years ago, and transferred from father to son, or more frequently from mother to daughter; or it is a recently founded establishment which is later on transferred for a high price to some one else. The advertisement, which is generally found in the magnetic periodicals, looks, for instance, like this one which appeared in *Chaine Magnétique* for February 15, 1886:

MAGNETISM, SOMNAMBULISM.

Mrs. Louis . . .

SOMNAMBULIST,

honorary member of various learned and humanistic societies.

House established in 1859.

(Address.)

Private consultations every day, 1 *to* 5 *P. M. except Sundays and holidays.*

Health, tests, voyages, advice, information.

N. B.—Mrs. Louis . . . . has no branch office in Paris.

The expense of founding such an establishment is not great. Two rooms suffice, the waiting-room and the consultation-room. As at a physician's, the furniture is in a sober style: you move about silently. In the waiting-room you often meet a *magnetizer;* he is almost indispensible; for he must charge the somnambulist with his magnetic fluid and put her eminent self *en rapport* with you. After he has mediated this *rapport*, he returns to the waiting-room: for in the inner room a lady is just now consulting about such delicate matters that he might intrude by his presence. Meanwhile he does what he can to inspire the clients with confidence both in the somnambulist and her magnetizer.

But what kind of persons then are these professional magnetizers and somnambulists? Well, generally very dubious characters. The first-named are largely recruited from such classes as have had some superficial connection with medicine—students of pharmacy, apothecaries, druggists, or students of medicine who never succeeded in pass ing their examinations. Furthermore there are the sons of magnetizers who find it most convenient to follow their father's profession. Highest in the scale stand doctors of medicine, who have succeeded in procuring

some cheap foreign diploma, and, we are ashamed to say, also one or two with a genuine Paris diploma, for whom ordinary practice has ceased, and who take refuge in this last resource and do not care particularly that their reputations diminish by this in the same degree as their cash increases.

Gilles de la Tourette mentions a striking example of how one of his schoolmates became a magnetizer. The son of a well-to-do farmer and gifted with an insuperable aversion to work, he had no success in his studies, but was employed for one year (1874) in a drug-store. In 1880 he appeared as a dentist in various country towns, where he adorned the windows of very poor hotels with immense posters which said: "Monsieur X., dentist, professor of *orthodontosie, orthodontechnie*," etc. Unfortunately the public did not allow itself to be deluded by these boasting terms, so he had to try something new, and now became a magnetizer and the founder of a new medical journal (of which more than one number never appeared) marked: "Fifth year; No. 22." and which was, in great numbers, gratuitously distributed to the public. He now associated himself with his brother, who was a duly qualified, though dishonest, physician, and they traveled about from one country-town to another, the real doctor curing asthma, and the magnetizer giving both private and public séances with the assistance of his mistress, who could be hypnotized readily and who had a great talent for telling fortunes. But soon the woman deserted them, after a violent domestic scene, and it was then that the former "professor of orthodontosie" hunted up his old school-mate at La Salpêtrière, in order to ask him to procure an experienced "subject." But a threat that he would be thrown out by two sturdy watchmen, soon made him retire.

Another had for some time been a student at Charcot's clinic. His poverty had aroused general compassion, and many contributed to his support. After committing several thefts he finally disappeared and became a magnetizer, having first lured a suitable hysterical woman from La Salpêtriére. Magnetizers generally are men whose lives are just about such wrecks as these.

But what kind of persons then are the somnambulists?

These usually come from the lower classes—many of them cannot even write their own prescriptions, but must for this purpose employ the aid of a magnetizer. A somnambulist may have a daughter, who also becomes a somnambulist and afterwards continues her mother's profession; but most of them are women who from curiosity visit the public séances of the "magnetic society." These séances (about which more will be said hereafter) are important markets for somnambulists. There the women meet renowned magnetizers, who publicly hypnotize those who are willing to lend themselves to the experiment. The future subject soon betrays her fitness by her nervous appearance. She is

easily persuaded to let herself be hypnotized. Delighted, she is encouraged by the magnetizer and by her own family, who are proud to have a subject among them. She comes again and meets the same magnetizer. He invites her home to a "*select* circle," where her feats will be witnessed by none but "connoisseurs." This is nothing but a public séance, for the personal invitations are given in the streets and every one pays from thirty to fifty centimes at the door. After a few such séances, she is invited to come to the magnetizer's private consultations, "so that he may develop her lucidity," and now she is caught in his net. Now she is a "goldfish" by which he earns quantities of money, until it strikes her that she would rather do business for herself, as she is not satisfied with the five francs which is her usual fee. Sometimes however they agree equally to divide the income. These magnetizers, who develope and impose upon young somnambulists, are the ones who stand highest in reputation, and who are at the head of the "magnetic societies" as their founders, presidents, honorary members, etc. Their number is comparatively small—only forty or fifty in Paris. But besides, there are more than five hundred somnambulic cabinets in Paris, with a complete list of male and female assistants.

When the magnetizer associates himself with the somnambulist, he often enters into more or less legal matrimonial relations with her, and now her lucidity is greatly "developed" by the secret signs, by which they communicate with each other. So it continues for some time, until the magnetizer is cheated by his female assistant. Slyly she hires a separate apartment, bribes the janitor to direct the customers to her, and one fine day the bird has left its cage. For her new cabinet she hires a young magnetizer. He is a miserable wretch, who either now makes his *début* in this profession or who has become a bankrupt in it, as his lazy, drunken habits prevent him from maintaining his own cabinet any longer. For the rest, the somnambulist is the active partner; it is only required of the magnetizer that he shall know how to represent the firm. He need not cost much either: a little more or a little less "fluid" makes no difference. Besides a somnambulist has always several resources. She also tells fortunes from cards, from the palms of the hands, from coffee grounds, from the white of an egg, etc., for which no magnetizer is needed.

But in order now to draw customers to the cabinet, advertising is used in all its forms. The fourth page of the newspapers can generally be had. There is printed in large type: "*Madame X., somnambule*; the past; the future; lost articles; also by correspondence," etc. But such advertisements are expensive. Instead, circulars are printed and exhibited in barbers' shops, in barrooms, in tobacco-shops: or they are distributed in the streets. Or a bill is posted in the window: "*Here the future is foretold.*" The former customary addition: "Consultation five francs" is omitted, but the fee has not been changed. "Personal

invitation-cards" on red and blue paper are distributed to every one. Then the séance is gratuitous, except the compulsory fifty centimes to the door-keeper. The small apartment is soon crowded. The somnambulist, who has a smile for every one, lets herself be put asleep by the magnetizer, attired in evening-dress (hired for the occasion), and now she gives gratuitous advice to all who desire to honor her with their confidence. Then she excites their curiosity without satisfying it. The next day most of them return for a consultation for which they pay. If they do not return, they at least spread her reputation; she immediately becomes a celebrity and a member of the better magnetic societies. Thus "a good house" is formed.

Let us now cast a glance at the magnetic societies (*les sociétés de magnétisme*). These trace their origin to Mesmer, who in 1783 founded the famous "harmonic society" (*Loge* or *Société de l' Harmonie*), consisting of one hundred members, who as entrance-fee had to pay the neat little sum of one hundred louis d'or, or two thousand four hundred francs a head. The members soon found themselves cheated and demanded their money back. But Mesmer accused them of having betrayed his secrets, and kept it. In 1784, a society with the same name was founded in Strasburg by the Marquis de Puységur, and at the same time a *Société de la Guyenne* by his brother in Bordeaux. Now the brilliant and respectable period began for the magnetic societies, which soon flourished in all the larger cities, and were directed by rich, honorable and well-meaning men, who at least intended to heal the sick, gratuitously, by magnetism. These societies were dissolved by the Revolution and the wars of the Empire, but were re-established at the Restoration, although with varying success. The Baron du Potet now became the soul of these societies, from 1825 to 1860, and he took up the fight against the academic authorities. His *Journal*, founded in 1845, became the organ of all the societies, and his "*Traité du Magnétisme Animal*" was in everyone's hands, Nevertheless he lived to witness the decadence of these societies, that is, their change into mere business enterprises; and on several occasions, he had to express his indignation at seeing the old "philanthropic temples" change into "shops."

The present societies in Paris are such transformations of the old ones. Thus *l' Ecole de l' Union Magnètique* of 1883 has absorbed the old societies *La Société Magnètique* of 1815, *La S. Philanthropico-magnétique* of 1840, *Le Jury Magnétique* of 1847, and *La Société de Magnétisme de Paris* of 1853.

Every society generally has its literary organ, usually a monthly, which serves partly to discuss magnetic subjects, but chiefly to advertise its members, magnetizers and somnambulists. One of the

latest and most prominent—"*La Chaîne Magnétique*—belongs to a vice-president and founder of "*l'Institution Magéntologique de Paris*," and is a bitter opponent of the "*Revue Spirite*".

The societies, which always have a philanthropical motto on their signs! —"Let us seek the truth," "Let us do good," etc.—are open to men and women, usually at two francs a month, which money is spent in hiring a large hall for the meetings,—for instance, a café in the Palais Royal—which have as their real object the personal advertisement of the members, and which are good markets for somnambulists. Those who attend may be divided into two classes—the deceiving and the deceived. Among the former are those noted magnetizers and somnambulists, who let themselves be put to sleep to advertise the private cabinets. Among the latter are the "invited;" these must be "personally invited," as the societies are considered private. But nevertheless the door is open to any one who pays the customary fee to the janitor. The audience is very mixed; in the first place we find members who are neither magnetizers nor somnambulists, but persons of leisure, such as old military pensioners and a few *rentiers*, who find it amusing to while away the time by this comedy. Furthermore, we find whole families, including children; young girls who become somnambulists; and finally some skeptics, who scoff loudly enough to make the president threaten to eject them.

Let us enter when the séance is at its height; it is about nine P. M. On a small platform the president and two assistants are seated. A book-case with carefully labeled books rises behind them. Their even arrangement shows that they are not often used. A deep silence prevails. With imposing gestures, four magnetizers at one time give forth their fluid upon four subjects, chosen from those in the audience who have offered themselves. One, who has now sufficiently prepared his subject, shows the tricks he can do with her. He crosses her arms with contracture and lets the astonished public convince itself of the tetanus. But the bait for the evening is the "gratuitous consultation." An aged somnambulist, with her fingers loaded with large rings, sits down before a magnetizer. He begins to gesticulate vigorously; he communicates his magnetic fluid to her, first slowly and powerfully, then more violently, then with gradually diminishing force, until the pythoness is asleep. Then he announces to the audience that Madame S. is ready to give advice to those who desire it. A young man steps forward and sits down before her. She touches him with her finger, paws over him and says slowly: "Yes—I see—you cough a little—I see—in your body—right through your body—the trachea—the bronchiæ—the lungs—ah! tubercles—no, not tubercles—but a cavity." (The consulting person is frightened: flattering murmur from the audience, already astonished at the scientific ability of the somnambulist.) "You must take care of yourself,"

she resumes. "In order to make matters right again, you must drink a glass of magnetized water every morning and evening."

The consultation is finished. The young man promises to come to Madame S. the next day, in order to get—for money of course—the saving drink.

"Is there any one in the audience, who wishes to make a journey?" the magnetizer asks. That takes place thus: One of the company comes forward and moves *in his thoughts* from one place to another, and by her lucidity the somnambulist will understand and loudly announce, where the traveller is at every moment. Once when Gilles de la Tourette was present, the experiment was made as follows. "Well," the somnambulist says, "we are on a road—long—very long. I see a house—Oh, yes!—a large house." "Isn't that right?" the magnetizer interrupts —"Almost" is the answer. The somnambulist leans against the traveler to gain better rapport. "There are persons—many persons in this house—clothes are hanging in the windows." Then a long pause, during which the magnetizer again charges with his "fluid" the somnambulist, whose lucidity seems to give out—"Ah!—I see —there is also a river in the vicinity."—"Is not that right; isn't it true?" says the magnetizer. "Almost," the doubting traveler answers.—"Along the river there are trees—large trees." New pause, during which the somnambulist puts her hands to her head and appears to be suffering. —"Large trees—yes, I see" (she grasps the traveller's hands).—"The landscape is very fine"(she pants).—"That is so," the traveler says, "but what is the name of the river? "—"Sir! the somnambulist is not to be questioned," the magnetizer says sternly; "I alone can put you *in rapport* with her. You disturb her freedom; in this way you make her sick, very sick." He recommences his magnetic passes. Somewhat disconcerted and puzzled, the traveller retires, under a disapproving murmur from the audience.

But the somnambulist cannot stop at this failure. She must have a brilliant revenge. Now a person steps forward, one who is never absent from any sèance; a crank with white hair and almost entirely blind, but a fanatical believer in magnetism, who claims to owe everything to the advice of the somnambulists.—Thanks to the magnetizer's fluid, the somnambulist has become calmer. The magnetizer recognizes his faithful customer and asks: "Is there any one else who wishes to consult?" The half-blind crank, who steps forward with several others, is *selected* (!) by the magnetizer, is made to sit down silently, and is told to answer questions, but not to ask any disturbing questions himself. "You suffer much!"—"Yes, Madame."—"In your head, don't you?" the somnambulist says; she has recognized the man by his voice, for her eyes are closed. "Yes, Madame."—"It is in your eyes that you suffer, but you will become well." The consulting person becomes wild with joy. He turns to the audience, makes an

enthusiastic speech (always the same one), relates that he has been cured of six diseases by somnambulists, that he would have been blind long ago (he can hardly see to find his way!), if he had not employed magnetism. And he has also studied and has become a magnetizer himself. With elaborate gestures he unloads some of the immense quantity of fluid that he has in him, and exhorts those present to become faithful believers in magnetism.

During this harangue the magnetizer has awakened the somnambulist, who, after congratulations from the president, descends from her throne; and without being bewildered by her success, she graciously distributes her business cards: "Madame S., every day from — to —; the past; the future; lost articles; diseases; etc." The next day she can count upon good receipts from her private consultations. Similar advertisements are distributed among the company by at least half a dozen respectable ladies, each more "lucid" than the other. Then you can witness a nice little quarrel between the rival ladies, who are to each other in the relation of cat and dog, just as the different societies and journals are in a constant strife among themselves.

It might be asked whether the somnambulists really sleep or only pretend to do so. In their youth, most of them have been nervous, hysterical, natural somnambulists, who have exercised their talent by means of hypnotism, and they are at least capable of genuine somnambulism; but as they grow old, they often find it more convenient to deceive the public by simulated sleep. Or they hire one or two young somnambulists, who have to work at a salary in their cabinets, while they inconvenience themselves only on rare occasions and for specially favored customers. We have already mentioned that, uneducated though they may seem, yet in the genuine somnambulistic state they really give astonishingly apt and intelligent advice. Moreover they are so well-trained by the magnetizers, that they always have on hand a stock of learned phrases meet for every occasion.

It is saddening to find what an attraction their mystic art exercises on all classes in Paris, too often even on the best educated; clever somnambulists sometimes succeed in making for themselves nests in families, so that nothing of importance can be undertaken without these oracles being asked for advice; and usually these vampires will not let a good customer off until his purse has been almost drained. They do an especially good business by their pretended power of finding hidden treasures. But after the great compensation, agreed upon, has once been extorted, they artfully withdraw from the game. But fortune-telling is practiced by them, not only during somnambulism, but also in various other ways, as by "*faire le tamis*," that is:—by letting drops of water fall through a fine sieve—by palmistry, by coffee-grounds, by the white of an egg which takes various shapes when poured into water, by melting lead, etc.

The more noted somnambulists are often in conspiracy with physicians and druggists. They pay a physician—alas! there are in Paris qualified medical men who lend themselves to this knavery—who signs their prescriptions, so that they may not be fined for quackery, and they receive a good commission from the pharmacists and druggists to whom they send their customers to buy the medicines. Every one is swindled by these blood-suckers. They can also be consulted "*par correspondance*"—if the fee is paid in advance.

This "magnetic league," which works its mischief in Paris, is a vast organization. Besides the five hundred somnambulic cabinets already mentioned, it has its twenty periodicals, special clinics for the sick and for instruction in magnetism, and is at present supposed to have more than forty thousand followers. There are also "*magnétiseurs-masseurs*," so-called, who, at their homes or in the house of the patient, combine massage with magnetism. These, however, have a more despised position, and are considered as the "barbers" of magnetism. The magnetic societies of Paris have branch-departments in the country, with which they are in close connection.

Finally we arrive at the public theatrical appearances of travelling magnetizers, who, for money, exhibit magnetic and hypnotic phenomena. Besides the improper way in which these "artists," under the false title of doctors or professors, swindle money out of the public, they also do great harm in various ways, some times to the subjects, who trustingly lend themselves to their dangerous experiments, sometimes indirectly by tempting other adventurers to imitate them in private or in public. The most famous of the travelling magnetizers of recent times are Dhont, who calls himself Donato, and Hansen, a Dane. The former has been expelled from Italy, the latter from Austria, and in both these countries, as also in Switzerland (at least in some cantons) and in Copenhagen, laws have been enacted against the public practice of hypnotism by those who are not physicians.

Concerning the results of Donato's practice, Prof. Lombroso of Turin reports as follows: An artillery officer, who was hypnotized by Donato at a public séance, afterwards became almost insane. From time to time he had attacks of spontaneous hypnotism at the sight of any shining object. He would follow a carriage lamp in the street, as though spell-bound. One evening, if his fellow-officer had not saved him, he would have been crushed to death by going directly towards an approaching carriage. A violent hysterical crisis followed this and the man had to take to his bed.

Two students hypnotized themselves by staring at their compasses. After that, it became impossible for them to draw, without falling asleep. A railroad employé had convulsions and a violent attack of insanity. A young man of seventeen became morally depraved, was without sleep for three nights, and became deranged.

In Milan and Turin, many of those present at the séances grew sick and contracted headache and insomnia. Many went involuntarily to sleep in the hall. The physicians of Turin found a decided change for the worse in their nervous patients who had attended either as subjects for hypnotizing or merely as spectators.

Like *sequelæ* are also reported after Hansen's appearance in Breslau, for instance, where a perfect fever for magnetizing arose among the young people, who amused themselves by "The Hansen game," so that many fell ill. One boy alarmed his parents by a tetanic spasm of several hours duration; the physician who was called cured him by a sharp blow on the ear.

To gain speedier results and the more effectually to impose upon their astonished audiences, Donato and Hansen often used a very exhausting and dangerous method causing their subjects to whirl rapidly around so as to produce congestion of the brain and exhaust their strength, whereupon they frightened them to sleep by suddenly staring at their eyes.

Many a time it has happened that an ignorant magnetizer has been able to hypnotize but not to dehypnotize; thus the nervous system may suffer irremediable injury. By a few hypnoses, many women, who previously had only a slumbering disposition to hysteria, have had this disease brought to full activity with violent hysterical attacks.

From all this we find, that hypnotism is not *to be trifled with;* that it can harm in various ways, and that it requires all the skill and conscientiousness of an experienced physician to properly use this powerful agency.

THE END.

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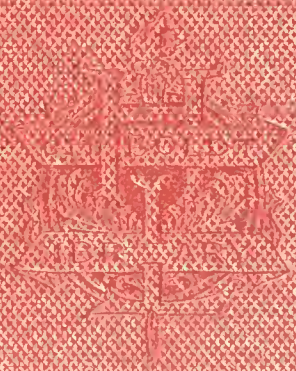
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